

Variation in the Impact of the Global Recession

An exploratory research on the variation in the impact of the global recession on production SMEs situated in the eastern part of the Netherlands.

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Content

| | |
|---|-----------|
| 1. Introduction | 8 |
| 2. Theoretical framework | 11 |
| 2.1 Introduction | 11 |
| 2.2 Global Recession | 11 |
| 2.3 Focus areas influencing the impact | 13 |
| 2.3.1 Diversification | 13 |
| 2.3.2 Innovation | 18 |
| 2.3.3 External partners | 21 |
| 3. Methodology | 24 |
| 3.1 Research design | 24 |
| 3.1.1 Case selection | 26 |
| 3.2 Data collection | 28 |
| 3.3 Data analysis | 29 |

4. Case results _____ **30**

4.1 Case descriptions _____ **30**

4.1.1 Extreme case one (E-one) _____ 30

4.1.2 Comparison case one (C-one) _____ 33

4.1.3 Extreme case two (E-two) _____ 35

4.1.4 Comparison case two (C-two) _____ 38

4.1.5 Extreme case three (E-Three) _____ 40

4.1.6 Comparison case three (C-three) _____ 43

4.2 Comparing the cases _____ **45**

4.2.1 Diversification _____ 46

4.2.2 Innovation _____ 48

4.2.3 External relationships _____ 51

4.2.4 Long-term contracts _____ 54

4.3 Conclusion _____ **56**

5. Discussion _____ **57**

5.1 Conclusions _____ **57**

5.1.1 Essential differences between the SMEs _____ 57

5.1.2 Main conclusion _____ 61

5.2 Limitations of the research _____ **62**

5.3 Suggestions for further research _____ **62**

6 Implications _____ **64**

6.1 Implications for SMEs _____ 64

References _____ **66**

Appendix 1 Interview protocol (in Dutch) _____ **74**

1. Introduction

It became clear in 2007 that the United States of America faced a huge problem with “junk mortgage”. There came uncertainty between banks about their credibility, this uncertainty scattered around on the financial market, and soon the first big bank collapsed. The resulted financial crisis of the USA also had consequences for Europe. European banks had investments in the USA which came under pressure and this affected their credibility, which eventually led to a Global Recession (henceforth: GR). Not only banks and organizations were affected by the GR, even countries were affected; for example Greece received a loan from the European Union and the International Monetary Fund to save it from bankruptcy in April 2010. This means that even now in 2010, the GR has not ended; it still affects organizations all over the world. One would expect that because the GR affects every country and every region it also affects every organization. According to Chakarabarti et al. (2007) an economic recession is a broad, major sudden and unanticipated change in the economic environment. The consequences for firms are a decline in revenues and profit (Chakrabarti et al., 2007).

Recently the University of Twente together with the Verenigde Maakindustrie Oost-Nederland conducted an innovation scan. They measured the innovation performance of small and medium sized enterprises (henceforth: SMEs) in the eastern part of the Netherlands which are active in the production industry. They found that not every SME experiences the impact of the GR as negative; a few of them experienced the impact of the GR as positive. And what is more, some SMEs were able to have a positive operating income during the GR. Although there were also similar SMEs that were not able to have a positive operating income and experienced the impact of the GR as strongly negative. In summary; there is a difference in the impact of the recession on SMEs and even more surprising is that some companies have even benefited from the recession, for example by keeping the profit stable or even increase profits. For that reason, the objective of this research is to explore how it is possible that some SMEs benefited from the GR and others did not.

Based on the objective, the research problem we want to explore is; why there is a difference in the impact of the GR between comparable production companies situated in the eastern part of the Netherlands. The research problem was broken down into several

research questions. The research questions are constructed in such a way, that together they provide an answer to the overall problem formulated for this research. The research questions are:

1. *How did the small and medium sized enterprises that experienced the impact of the global recession as negative, respond to the global recession?*
2. *How did the small and medium sized enterprises that experienced the impact of the global recession as positive, respond to the global recession?*
3. *What are the essential differences between small and medium sized enterprises in relation to the impact of the global recession they faced?*

To accomplish the research objective and answer the research questions, we conducted a multiple case study in which we compare SMEs experiencing the GR as positive with comparable SMEs that have similar characteristics, but experiencing the GR as negative. The methodological approach we use differs from previous research on recessions because the units of analyses were selected based on their performance and corresponding characteristics. Firstly by selecting the cases from the results of the innovation scan conducted by the University of Twente and the Verenigde Maak-industrie Oost Nederland, the SMEs that experienced the impact of the GR as positive were selected. Based on the characteristics of the selected SMEs the opposite cases were chosen. The cases selected, were based on: size, branch, operating income and the way they experienced the impact of the GR. Secondly, the selected firms were interviewed with specific questions resulting from the results of the innovation scan and on focus areas mentioned in literature that could have affected the impact of the GR on their firm.

Due to the inductive nature of this research we conducted a review on former literature that intended to form relationship between performance and specific firm focus areas. By doing so, we got an impression on possible focus areas of organizations that have been discussed very frequently by previous scholars describing the relation between the focus areas and uncertainties in the environment, which could have played a role during the GR. In literature review we found that the GR created uncertainty for organizations, this was confirmed by Lee and Makhija (2009) they found that an economic crisis is mostly unknown and unpredictable for organizations, which makes it difficult to configure the organizations' investment in the best way in advance (Lee and Makhija, 2009).

Different scholars have found focus areas which have had impact on the organization during environmental uncertainty. One of these focus areas is diversification, and the way the firm deals with it. Scholars tried to find if it is wise to focus on one product or to spread the risk to other markets. Therefore we will discuss diversification in the theoretical framework. Different scholars emphasize that the way organizations deal with innovation influences the impact of an environmental uncertainty. Firms use innovation to improve effectiveness in a response to change in their internal or external environments (Damanpour, 1991). Literature describes that the way organizations deal with external parties plays a role in the impact of an environmental uncertainty. Firms facing an environmental decline can profit from their external relations (Harrison et al, 2001).

It would be great if this research contributes to the academic field but also to the business field. In the academic field this research would give insight into the differences in the impact of the GR on small and medium sized production enterprises in the eastern part of the Netherlands. This research also contributes to the organizational performance literature in times of crisis. On the business field we hope that the findings of this research will be useful for managers facing an economic downturn, because, according to the business cycle (Hartley et al., 1998), the GR will not be the last crisis firms will face.

In the following chapter there is a description of the theoretical focus areas found in this research. It is described how these focus areas have influenced organizations in the past. These focus areas were selected because they were found in the multiple case studies conducted during this research. The methodology of this research is described in chapter 3. The context of the focus areas found and how they influenced the cases is described in chapter 4. The results of the case studies from chapter 4 and how these focus areas are described in literature are discussed in chapter 5 resulting in a conclusion. Finally in chapter 6 we describe the implications of this research for SMEs.

2. Theoretical framework

2.1 Introduction

The main goal of this research is to explore the differences in impact of the GR on production SMEs; to give insights in the theoretical aspects of the difference in impact of the GR. We start this chapter by describing the theoretical background of the GR in §2.2, in the same paragraph we classify the impact of the GR. Secondly, we will describe the theoretical background of the focus areas found in literature in §2.3, we will start with diversification, followed by innovation and subsequently, the influences of external relationships.

2.2 Global Recession

In this research, we deal with the concept GR. In literature, the most common used definition of a recession is that of the national bureau of economic research, which defines a recession as *“a significant decline in activity spread across the economy, lasting more than a few months, visible in industrial production, employment, real income, and wholesale-retail trade.”*(Claessens et al., 2009, p. 659). This significant decline in activities spread across the economy, results in a change in the environment. We classify the environmental change resulted from the GR with the classification developed by Suarez and Olivia (2005), they have built upon the research of Wholey and Brittain’s (1989) characterization of environmental variation. Suarez and Olivia classification contains four elements, which are used to classify the environmental change:

- Frequency: The number of environmental disturbance per unit of time;
- Amplitude: The magnitude of the deviation from initial conditions caused by a disturbance;
- Speed: Rate of change of the disturbance (deviation/time);
- Scope: The number of environmental dimensions that are affected by simultaneous disturbance.

The four basic attributes can be combined in a variety of ways to classify different types of environmental change, which in turn require different degrees of sophistication and depth

in the firm's response to the resultant situations. The different classifications are illustrated in table 1.

| Frequency | Amplitude | Speed | Scope | Type of environmental change |
|-----------|-----------|-------|-------|------------------------------|
| Low | Low | Low | Low | Regular |
| High | Low | High | Low | Hyperturbulence |
| Low | High | High | Low | Specific shock |
| Low | High | Low | Low | Disruptive |
| Low | High | High | High | Avalanche |

Table 1: Elements of change and resulting classifications

The first type, *regular change*, corresponds to environments that regularly experience a low-intensity, gradual change.

The second type, *hyperturbulence*, corresponds to environments that feature a high frequency of high speed-change in one dimension (or a few). The industry of firms facing this type of change is characterized by a new dynamic that altered the industries pace and imposed on firms the need to take new frequent steps to adapt to the fast changing conditions. However, the accumulated effect of this disturbance is modest.

The third type, *specific shock*, corresponds to environmental changes that are rapid and high in intensity, come rarely and are relatively narrow in scope; a typical example is industry deregulation. A specific shock may dissipate and disappear after a while, returning to base line, or it may lead to structural stepwise change.

The fourth type, *disruptive change*, corresponds to changes that occur infrequently, develop gradually, and although they typically emerge in a confined layer of the environment, they have a high-intensity effect and can pose serious adaptation challenges for organizations. Disruptive technologies (Christensen, 1992) are an example of this type of change; typically require new sets of skills and tend to go unnoticed by industry incumbents for a while.

Finally, the most extreme form of environmental change is *avalanche change*. It occurs very infrequently but is of high intensity, of high speed, and simultaneously affects multiple dimensions of the environment; an example of avalanche change is the implementation of profound economic reforms in developing economies and former society-style countries. In

countries where such radical reforms have been implemented, the pre-reform period was characterized by a gradual deterioration of economic conditions such that a swift, profound change was seen as the only way out (Suarez & Olivia, 2005).

This last and extreme form of the classifications developed by Suarez and Olivia (2005), is also a way the GR can be classified. Because the characteristics of the avalanche environmental change implicate that the frequency of such is low, it is comparable with the GR. The last crisis was in 2001, due to the burst of the dot-com bubble. The magnitude and speed are high because of the deviation from initial conditions caused by the GR. The scope of the change is high because everything in the environmental dimensions is affected by the GR.

The impact of this avalanche change on organizations is intense but according to different scholars, there are some focus areas that could help organizations overcome or even benefit from an avalanche change.

2.3 Focus areas influencing the impact

In literature, we found several focus areas used by organizations to respond to an environmental change, or seemed to affect the impact of environmental change. The first focus area found in literature is diversification which will be described in §2.3.1. The second focus area is innovation, the theoretical background of this focus area will be described in §2.3.2. The final focus area found in literature is the way organizations deal with external partners, we will describe this in §2.3.3. In each paragraph, we define the focus area, the advantages and disadvantages of the focus area, and the theoretical consequences of the specific focus area for the SMEs in relation with the GR.

2.3.1 Diversification

One of the focus area found in literature was diversification. In literature diversification is defined by Ramanujam and Varadarajan (1989), "*diversification is the entry of a firm into new lines of business, either by processes of internal business development or acquisition.*" (Ramanujam & Varadarajan, 1989, p. 525) Literature on diversification can be divided into two, product diversification and international diversification. Both of them play a key role in the business strategy of firms (Hitt et al., 1994). We will now describe these two different ways of diversification.

Product diversification

Diversification has always been a hot topic in research on strategic management. Many scholars found a significant relationship between diversification and high performance (Grant, 1988). As already mentioned briefly, the first area in which diversification can be divided is product diversification. Hitt et al. defined product diversification as “*expansion into product markets new to the firm*” (Hitt et al., 1994, p. 298).

Operating in different markets was researched by Stimpert and Duhaime (1997), they proposed that as some firms operate in industries with profitability and slow growth rate, they are likely to exploit new markets (Stimpert & Duhaime, 1997). Therefore firms could use diversification to get away from the poor profitability of industry and use it to increase market power (Christensen & Montgomery, 1981). If a situation would arise where the whole industry faces rates of slow growth, then the only way to recover the profitability of the firm would be product diversification.

In the resource-based theory it shows that the internal competitive advantage of firms is a factor which determines firms’ performance (Wernerfelt, 1984; Dierickx & Cool, 1989; Prahalad & Hamel, 1990). The resource-based view states that product diversification will generate economies of scope and uncertain imitability to gain greater profit. Firms can use the existing resource for example the common distribution system, managerial capabilities, and factories (Barney, 1991; Prahalad & Hamel, 1990; Wernerfelt, 1984). Firms with a diverse set of products also have the opportunities to use their existing core skills and knowledge to exploit other businesses (Geringer et al., 1989). This suggests that being diversified has a lot of advantages. For instance; a greater target market, utilization of unused productive capacity, risk reduction in terms of diverse portfolio of business, and capability build up (Ramanujam & Varadarajan, 1989).

Despite the advantages of diversification, there are some disadvantages, for example there are high costs involved with diversification, and according to Grant et al. (1988) another problem of diversification for firms is the increased managerial, structural, and organizational complexity (Grant, 1988). Therefore the costs of controlling and coordinating the firm may surpass the benefits of product diversification. This suggests that using product diversification on a scale that the firm can handle the cost, would create stability in its

profits or even increase it. However several empirical studies have showed that firms using product diversification enjoy more profit stability than firms without diversification (McDougall & Round, 1984).

Based on the theoretical findings, product diversification would give SMEs several advantages. Before the GR started product diversified firms have more stable income, because the firms are active with different products. By using product diversification they can expand to product markets new to the firm. Firms could use their existing core skills and knowledge to exploit other business, by doing this they spread the risks of being in a decreasing market.

At the moment the GR starts and begins to affect the markets of the product diversified firms, they could use their unused production capacity for other products. Further, they would have an advantage over firms which are not diversified, because the less diversified the firms are, the more chance they have of getting in a decreasing market. According to literature the best thing would be to start with product diversification before the GR, because of the high costs involved with diversification, which could be needed during a recession, to absorb the blows. Besides the high costs, the increased managerial, structural and organizational complexity would withhold firms to start product diversification during the GR. During the GR the diversified firms would have an advantage over firms that are diversifying during the GR. This advantage is created due to the fact that SMEs that are in a decreasing market would start product diversification to get away from the poor profitability of industry. They use it to increase market power; however the firms which are already diversified on different markets would be less affected.

International diversification

The other area in which diversification can be divided is international diversification. As Hitt et al defined *“International diversification may be defined as expanding across country borders into geographic locations (e.g., markets) that are new to the firm.”* (Hitt et al., 298).

One of the first authors who mentioned international diversification was Grubel (1968), he found that holding diversified international assets is a good way to reduce risk for asset holders (Grubel, 1968). In later research of Rugman (1979) he describes that having operations in different nations makes multinational enterprises able to stabilize itself in

both the demand and the supply side (Rugman, 1979). Therefore by international diversification, multinational enterprises reduce the risk and gain more stable earnings than comparable firms selling on the domestic market. Several scholars have looked at the impact of international diversification on profitability; these empirical studies have generally found a positive significance to profitability (Severn & Laurence, 1974; Grant, 1987; Kim et al., 1989; Tallman & Li, 1996; Tongli & Ping, 2005). In some research there was an inverted U-shaped relationship found instead of a linear relationship based on longitudinal data in a long period (Hitt et al., 1997)

The positive aspects of international diversification are described in the research of Kim (1993). The positive relationship between international diversification and profit performance as firms with international diversification are provided with the following opportunities, exploiting the economies of scale and scope, broader learning and developing more divers capacity, and configuring value-added chain flexibility (Kim, 1993).

International diversification is found to significantly reduce the variance of profit of companies (Rugman, 1979; Miller & Pras, 1980; Kim & Hwang, 1989). In other words the internationalization of companies stabilizes the profit performance and reduces the risk. This is created because the different national markets tend not to be perfectly, positively correlated with each other, in a situation where the foreign market is not perfectly correlated with the domestic economy; the multinational enterprises experience more stable earning than firms selling in domestic market only (Rugman, 1979, Kim & Hwang, 1989). An important point here is that with international diversification it does not only mean selling products in different markets, but also internationalized production and other activities of firms.

Kim et al (1993) made a more comprehensive argument by clarifying that international diversification endows firms with three unique options over domestic firms to reduce the level of corporate risk

1. The presence in different national markets provides the firm with the opportunity to retaliate against aggressive moves by competitors;
2. It allows firms to minimize the negative effects in one country, such as change of political stability, regulations, taxation structure, exchange rate, interest rates, wage, commodity and raw material by providing the option to shift production or sourcing sites to other countries;
3. The firm would not be affected by the supply and demand fluctuation of any specific national market.

Taking historical environmental uncertainties in perspective, it seems that international diversification is a good method for firms to have a stable profit while being in a crisis. In the research of Lee and Makhija (2009) it was proved with empirical study, in the context of 1998 Korean economic crisis, that foreign direct investment and exporting investment provide firms with flexibility which is very valuable in economic crisis (Lee & Makhija, 2009). Tongli et al. also gave evidence that international diversification is positively related with profitability in the 1990's Asian financial crisis (Tongli et al., 2005)

The downside of international diversification is quite similar to product diversification; it is not cost-free, due to the organizational and managerial challenges during the internationalization process (Thomas, 2005). Similar as with product diversification the costs can explain the inverted U-shaped relationship. In the initial stage of international expansion the firms experience positive returns, but in a later phase of the international expansion, managerial and organizational problems arise, which would make the costs of international diversification outweigh the benefit, thus return would be negative. Eventually the high level of internationalization can be managed and the positive results would be achieved on the long run (Thomas & Eden, 2004).

Based on the theoretical findings, SMEs could benefit from international diversification before the GR. With international diversification the SMEs are able to expand across country borders into geographic locations that are new to the firm. If SMEs use international diversification they reduce risks for asset holders, and they are able to stabilize themselves

on the demand and supply side. The SMEs with international diversification would stabilize earnings compared to SMEs that are selling on the domestic market.

This is also convenient when SMEs face the GR, they can absorb the blows of countries that suffer heavily from the GR with countries that are less affected. When there would be a situation where the recession would be continental, it would be wise for SMEs to use international diversification to profit from continents that are not affected by the recession. Since the recession is global it would be hard to find countries that are less affected by the GR but theoretically it would not be impossible. Similar as with product diversification, starting international diversification during the GR is risky, due to the costs and the managerial challenges. Therefore it would have been better to start international diversification before the GR.

2.3.2 Innovation

The second focus area found in literature is innovation. According to van de Ven (1986), an innovation is *“the successful exploitation of new ideas”* (van de Ven, 1986, p. 590). Examples of innovation include the development or adoption of a new product or service, a new manufacturing process or technology, or a revised strategic organization (Cheng & Van de Ven, 1996). In a changing internal or external environment, firms could use innovation to improve effectiveness (Damanpour, 1991).

One of the reasons for firms to be innovative is that it can lead to performance advantages and long-term competitive advantage (Damanpour, 1991; Porter 1985). This competitive advantage is created by the so-called first mover advantage by introducing a radical innovation, which is a radically new product.

With this first mover advantage, the innovative organization can gain resources that followers may not be able to match. Therefore, by being innovative the organizations can get the advantage of technological leadership. Firms can keep this pioneering and first movers advantage by getting their product patented or by keeping the innovation an in-house secret (Lieberman & Montgomery, 1988).

An additional advantage of the first mover role is that the firm has superior information and the firm may be able to purchase assets at market prices below those that will prevail later in the evolution of the market. In other words, in many markets there is room for only a

limited number of profitable firms, the first-mover can often select the most attractive niches and may be able to take strategic actions that limits the amount of space available for subsequent entrants, and pre-emption of locations in geographic and product characteristics space (Lieberman & Montgomery, 1988).

In addition to the advantage of having superior information, innovation also creates a situation where it is hard, for a late entrant to enter the market, to attract customers away from the first movers, due to the switching costs. The switching costs come from three different sources. Firstly, the switching costs appear from initial transactions costs or investments that the customer makes to adapt to the late entrants product. This include time and resources spent in qualifying the late entrant, training employees, and disruption. Secondly, the switching costs arise because the buyer adapts to the characteristics of the product and its supplier and thus finds it costly to change over to another brand (Wernerfelt, 1984). The final type of switching costs is the contractual switching costs that may intentionally be created by the seller, for example an airline frequent-flyer program.

Being innovative could also lead to a secondary or late mover position. The secondary or late mover position is related to the incremental type of innovation, encompassing development processes that focus on the improvement of existing products. A secondary or late mover to an industry or market has the ability to study the first movers and their techniques and strategies. *"Late movers may be able to 'free-ride' on pioneering firms investments in a number of areas including R&D, buyer education, and infrastructure development"* (Lieberman & Montgomery, 1988, p. 47). This free ride effect is generated because the imitation costs are lower than the innovation costs.

Shifts in technology or needs, create advantages for the second or late mover position *"New entrants exploit technological discontinuities to displace existing incumbents"* (Lieberman & Montgomery, 1988, p. 12). Here the late entrants are able to assess a market need that will replace the currently being offered. This takes place when the first mover does not adapt or sees the change in the customers' needs a similar situation is when the competitor develops a better, more efficient, and sometimes less expensive product. This new technology is often introduced while the old technology is still growing, and the new technology may not be seen as an immediate threat. An example of this situation is the steam locomotive

industry not responding to the invention and commercialization of diesel fuel (Cooper and Schendel, 1976).

The production or adoption to innovation is also fraught with difficulties and introduces considerable risks to the firm (Abrahamson, 1991). In the research of Bowman and Hurry the uncertainty of payback from innovation by characterizing innovation expounded in the form of research and development expenditures *“as a willingness to back the hunch of a research scientist”* (Bowman & Hurry, 1993, p. 774).

In addition, existing administrative structures, processes and routines may curtail or even prevent the organizational flexibility needed to initiate or implement innovative activities (Eisenhardt & Bourgeois, 1988; Quinn, 1985).

During the innovation process there is another risk, a firm invests in an innovation in order to obtain future benefits. The innovation costs are sunk, which means that they cannot be recovered should the innovation projects be withdrawn (Braathen, 2004). There could be a situation where the firms need to build internal capabilities in order to bring the innovation to the market, which could take a long time (Alvarez & Barney, 2001).

Finally, there is the internal resistance from existing structures that give rise to “politicking” among various constituents within the firm, thus slowing critical strategic response (Dougherty & Hardy, 1996; Shanem et al., 1995). With the implementation of an innovation, uncertainty arises, and it requires coordination across organizational subunits. With an innovation, change also arises, which will lead to resistance in the organization, not only with the employees but also with the managers because they cannot accurately predict their costs and benefits, compared with the existing policies and procedures (Mone et al., 1998).

Taking into consideration the advantages and disadvantages, it appears that SMEs can benefit from innovations. By using innovation the SMEs can respond to change in their internal or external environment resulted from change. Being active with innovation during the GR could be useful, SMEs could launch innovative products or production methods during the GR that could be very attractive to potential customers during the GR. SMEs who have the capability of being innovative during the GR can gain a competitive advantage over SMEs who have limited their innovation productivity during the GR. The innovative SME can

acquire superior information and the first mover advantage, which makes it hard for SMEs that were not innovative during the GR to overcome these advantages after the GR. Despite the advantages of the first mover role, there are also disadvantages. An example of such a disadvantage is that the market is not willing to invest in the first movers' product during the GR, but is willing to after the GR. Secondary or late movers to the market can learn from the first mover during the GR and enter the market in a later phase by using the knowledge of the first mover. With respect to the internal resistance of innovation, the SMEs could use the GR to minimize it. Because the SMEs could use the GR as a reason to innovate, this makes the changes more acceptable internally.

2.3.3 External partners

The final focus area found in literature is the way SMEs deal with their external relationships. In literature, an external relationship is defined as a "*commercially oriented connection between a business and other organizations*" (Street & Cameron, 2007, p. 240). The connection could be with several external partners like suppliers, customers, competitors, or other entities. These external relationships can be across industries and countries, and in different forms like; strategic alliances, joint ventures, long-term buyer supplier partnerships (Gulati et al, 2000) and technology exploration in cooperation with research labs and universities (George et al., 2002). The external relationships could be informal e.g. forums, informal networks or formal e.g. inter-firm networks, R&D partnerships (Ozgen & Baron, 2007).

One of the biggest advantages for establishing external partners is to gain access to complementary resources (Das & Teng, 2000). These complementary resource are gaining access to material resources such as financial capital, research and developmental facilities (Premaratne, 2001), referrals and contacts (Stuart et al., 1999) these are all shown or expected to be influenced by external relationships.

Another advantage of having external partners is that firms enhance the ability to compete (Pfirmsmann, 1998), increase competition awareness (Human & Provan, 1996), lower reliance or dependence on others (Skinner & Gultinan, 1986), as well as increase economies of scale and scope (Gomes-Casseres, 1997; Oughton & Whittam, 1997).

Several scholars found that having a relation with external parties stimulates sales, profitability, or lowers costs (Chen, 1999), as well as in more subjective terms such as increased innovation and added value (Chaston, 2000; Dickson & Hadjimanolis, 1998). With a diverse set of external partners, firms have more chance of creating a new or improved product that is commercially successful (Faems et al., 2005). With a diverse set of external partners, firms could use them for the achievement of a goal. For example; although risks do exist, a desire to increase international sales can be achieved by engaging a foreign partner (Dodd et al., 2002; Guillén, 2000). Other successful outcomes are planned increases in organizational, market, and product development (Bryson et al., 1997; Kanai & Hara, 1994). In some cases, small business survival is also considered a successful outcome of external relationships (Brüderl et al., 1992)

In the research of Ganesan (1994), they found that a competitive advantage could be created in a buyer seller relationship (Ganesan, 1994). When there would be a situation, where a buyer would take part in a long-term relationship the buyer can achieve a competitive advantage by receiving merchandise in short supply, information on new and best-selling products and competitive activity, best allowable prices, and advertising and markdown allowances. Similarly, sellers with long-term relationships can achieve a competitive advantage by obtaining information on best-selling products and competitive activity, better cooperative advertising, and special displays for their merchandise (Ganesan, 1994).

Besides the positive aspects of having external relationships, there are also negative aspects. There are some risks of trying to gain a competitive advantage through relationships, such as the dangers of being appropriated by the larger firm (Alvarez & Barney, 2001), or losing control when collaborating with larger firms (Gomes-Casseres 1997).

The benefits of having external partners are sometimes put off by their costs. For instance, with a joint venture, it gives a claim on the residual to the contributors of intermediate inputs, and thus reduces the chance that one of the firms tries to cheat on the other firm. However, the danger of cheating is not completely eliminated, because each joint venture partner can only claim a fraction of the residual, and will therefore still find it advantageous to maximize his own gain, at the expense of the venture. This contrasts with full equity

control, in which the parent, having full rights to the residual of the venture, is incited to maximize it. The efficiency of a joint venture therefore hinges on the convergence of the goals of parties to the agreement, or, failing this, on the degree to which opportunism by the partners can be controlled by other means, such as contracts, or hostages (Hennart, 1991).

Moreover, collaboration between partners can result that one of the partners has different intentions than the other partner. The partner could end the relationship on the moment they got what they wanted from the partnership (Hamel et al. 1989, Teece, 1986). Firms which transfer large amounts of tacit or poorly protected proprietary knowledge to their external partners, will find that the pricing and the enforcement of licensing contracts with external partners are fraught with difficulties. It is difficult to price technology, and to prevent its leakage beyond the partnership (Hladik 1985). A parent that possesses the full complement of knowledge to operate internationally has thus strong incentives to keep complete control.

Considering these findings, it appears SMEs can benefit from having external partners. Before the GR for instance, by establishing external partnerships, a firm could have access to complementary resources. The advantages of having external relationships could also be handy during the GR. An example would be a situation where banks do not have the capability of supplying the financial resources, there would be a possibility that an external partner does have the capability. Besides the advantages during the GR, there would also be advantages at the end of the GR. Organizations would produce fewer products, which would create a shortage on materials, but with external parties, the SME would have more opportunities of acquiring the complementary resources. Consequently, this would also lower the reliance or dependence on others and therefore increasing the competitive advantage. It would further support the already discussed diversification and innovation focus areas. Despite the positive side of having external partners there could also be a situation where the SME shares information with another firm that misuses the information due to the GR. This would be a resistance for firms to share knowledge during the GR.

3. Methodology

As been discussed so far, the purpose of the research is to explore the differences of impact of the GR on SMEs. In order to do so, we conducted a multiple case study. In this chapter, we explain why we choose for a multiple case study research and in which form this research is applied to be able to answer the research questions.

3.1 Research design

To explore why there is a difference in the impact of the GR on SMEs we chose the research method of a multiple case study. The multiple case study design was chosen for three reasons. First of all the case study design provides a research method that does not require control of behavioural events. Secondly, in this case study research it is likely to involve many more variables of interest than data points. As a third reason, the method should be able to focus on contemporary events, since this event is currently happening, according to Yin (2003) these should be characteristics of the research method (Yin, 2003).

The research will be limited to SMEs in the production industry, situated in the eastern part of the Netherlands. The production sector is chosen because it is a sector which is strongly affected by the GR on the supplier' side and the customer' side of the SME, and is therefore interesting to use in this research. This inductive research uses the production firms in the eastern part of the Netherlands as units of analysis. There is little research performed on SMEs performance during the GR, and the precise nature of the problem is unknown, therefore this is an exploratory research.

In order to answer the research questions, there was a need for data on the collaborative activities and financial performance of firms. In this research, we firstly use data of the project (in Dutch) *Innovatie Benchmark Oost-Nederlandse Maakindustrie* (henceforth: IBOM). This IBOM project is initiated by the research groups (in Dutch) *Operations, Organization and Human Resources* (henceforth: OOHR) and (in Dutch) *Nederlands Instituut voor kennisintensief Ondernemerschap* (henceforth: NIKOS) of the University of Twente and the interest group named the VMO (in Dutch) *Verenigde Maakindustrie Oost-Nederland* (henceforth: VMO). The VMO is an interest group for all the industrial production firms and knowledge bases in production firms in the eastern part of the Netherlands. The VMO has more than 170 members; all are production firms or firms directly linked to production

firms. The goal of their IBOM research is to analyse and map the innovation competences of SMEs in the production industry, situated in the eastern part of the Netherlands. To give further insight in the strategic choices and the innovation performance of SMEs in the eastern part of the Netherlands the VMO and the University of Twente started an innovation benchmark project.

The purpose of the IBOM project is to describe the innovation competences of a wide group of production SMEs in the eastern part of the Netherlands, to improve the cooperation between the VMO and the University of Twente, and to be able to support firms with the development of their innovation competencies.

The IBOM project uses an innovation scan to measure a firm's innovation performance this innovation scan is based on the conceptual model (see figure 1).

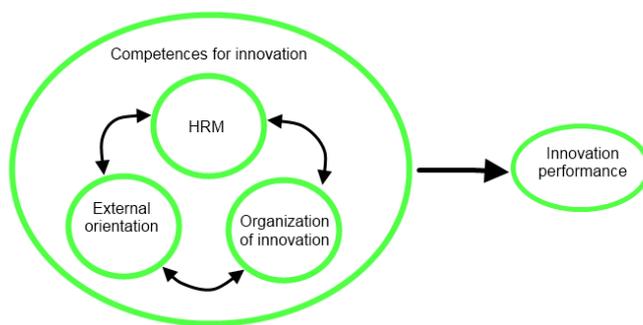


Figure 1. Conceptual model used in the IBOM project

The conceptual model contains three different concepts; HRM, organization of innovation and external orientation. These were used in the survey to measure the innovation performance. In this research, the results of the data were used to select SMEs with extreme outcomes, which were used in the multiple case studies.

For the research there are six SMEs selected, which participated in the IBOM project, these SMEs were used in the multiple-case studies design. Yin (2003) suggests that six to ten cases, if the results turn out as predicted, are sufficient to *"provide compelling support for the initial set of propositions"* (Yin, 2003, p. 46). Yin further mentioned that since the multiple-case studies approach does not rely on the type of representative sampling logic used in survey research, *"the typical criteria regarding sample size are irrelevant"* (Yin, 2003, p. 50). Instead, the number of cases required to reach saturation, that is, data collection until no significant new findings are revealed, determines sample size. The sample

participants are selected explicitly to encompass instances in which the phenomena under study are likely to be found. The SMEs that are selected, are seen as a whole. Therefore, the selected SMEs are treated as a holistic case study (Saunders et al, 2007).

3.1.1 Case selection

The innovation scan is a questionnaire developed by OOHR in the faculty of Management & Governance at the University of Twente, which can be used to quickly assess a company's innovation performance. The questionnaire was used to collect qualitative and quantitative data. The survey was sent to 150 SMEs who all were members of the VMO. In total 63 SMEs filled in the survey, which gave a response rate of 42%.

As soon as the innovation scan was completed, the data for each participating SME was analysed and summarized. After this, we started with selecting the SMEs from the results of the IBOM dataset, which we use in this research. The cases were selected by the extreme case selection method described by Seawright and Gerring (2008). By using this method, cases are selected because of their extreme values on both the impact of the GR on the SME and their operating income. For every extreme case which was selected there was a comparable case selected which has a similar amount of employees and is operating in the same sector i.e. OEM, Part supplier etc. The selection was done by analysing the data and looking for pairs. This pairing tactic was used to find similarities and differences between pairs (Eisenhardt, 1989). The big advantage of using this way of selecting cases is that the juxtaposition of seemingly different pair also can lead to understanding that is more sophisticated. The result of these forced comparisons can be new categories and concepts (Eisenhardt, 1989).

Due to insure the confidentiality and clarity we gave the cases fictitious names. The case name starts with an E or a C, the E is used for extreme cases and a C for comparison cases, this letter is followed by the number of the pair the case is in. For example, the SME named C-two is the comparison case of the second pair.

| Case name | | E-one | C-one |
|--------------------------------|--|-------------------|-------------------|
| Amount of employees | | 7 | 2 |
| Sector | | Part supplier | Part supplier |
| Operating income (2009) | | Profit | Loss |
| Impact of the GR | | Slightly positive | Strongly negative |

Table 2. Selected SMEs of pair 1

The first pair is shown in table 2. E-one was chosen due to fact that they experienced the GR as slightly positive, and was able to have a positive operating income. C-one was chosen because it is a comparable SME but was not able to generate a positive operating income and experienced the impact of the GR as strongly negative.

| Case name | | E-two | C-two |
|--------------------------------|--|-------------------|-------------------|
| Amount of employees | | 199 | 158 |
| Sector | | OEM | OEM |
| Operating income (2009) | | Profit | Break-even |
| Impact of the GR | | Slightly positive | Slightly negative |

Table 3. Selected SMEs of pair 2

The second pair (table 3) was chosen because they have a different size than the first pair. Another aspect why the cases were chosen is that E-two experienced the GR as positive and was able to generate a positive operating income, while C-two was chosen because it was not able to create a positive operating income and experienced the GR as slightly negative.

| Case name | E-three | C-three |
|-------------------------|--------------------------------|-------------------|
| Amount of employees | 30 | 28 |
| Sector | Part supplier | Part supplier |
| Operating income (2009) | Profit | Loss |
| Impact of the GR | Slightly positive ¹ | Strongly negative |

Table 4. Selected SMEs of pair 3

The third pair (table 4) was also chosen based on the size of the cases. The reason for choosing this third pair is that E-three experienced the GR as slightly positive and was able to have a positive operating income. While the impact of the GR for C-three was strongly negative, with a negative operating income. However, E-three and C-three are similar in branch and size.

3.2 Data collection

In this research, we use semi-structured interviews to collect the necessary data. The flexible character of a semi-structured interview allows new questions to be brought up during the interview because of what the interviewee says (Lindlof & Taylor, 2002). From every case, the person who oversees the strategic choices at the SME, was interviewed. To ensure that the interviews were properly carried out, we developed an interview protocol in advance for every case, this interview protocol can be found in appendix 1. The questions in the interview protocol were based on; the research questions, the theoretical framework, and answers given in the survey of the IBOM project. The questions that were asked in the interviews were mainly open questions and interrogating. The interviews were conducted face-to-face, at the location of the SMEs. The advantage of conducting the interview at the location of the SME is that each interviewee is in its own environment. This would result in that the interviewee would feel more comfortable and it would enrich communication. The length of the interview differed among the amount of questions for the case and time

¹ Initially E-three classified in the IBOM project of the impact of the GR on their firm as slightly negative. The main reason for E-three to classify it as slightly negative was because the revenue of existing customers decreased. However, during the interview E-three mentioned that the total revenue of E-three stayed the same and they were still able to have a positive operating income and gain new customers. Therefore we changed the classification of the impact of the GR to slightly positive.

available, but on average, it took 1 hour. The conducted interviews were recorded and verbatim transcribed to ensure reliability (Eisenhardt & Bourgeois III, 1988). This was done by the same method and by the interviewer himself. By developing an interview-protocol for every case, the transcript can provide a consistently prepared and comparable textual record (McLellan et al., 2003). The transcripts were only accessible for the researcher, in order to ensure confidentiality. To improve the reliability, the transcript was sent to the interviewee, to give them the opportunity to check the transcripts. After the interview of each case, the interview protocol was checked and adapted, and questions were improved or adapted.

3.3 Data analysis

When all the interviews were conducted, the analysis began by developing a case description for each case. This was done by a 'within case' analysis. In this 'within case' analysis we have started by describing the global case description, by giving information about the amount of employees and the core business. After the global description, we have described what the situation was like before the GR started. Followed by a description of how the case responded to the influences of the GR. The results of the 'within case' analyses is described in §4.1.

The 'within case' analyses was followed by a 'cross-case' analysis, which is defined by Babbie (2010) as "an analysis that involves an examination of more than one case" (Babbie, 2010, p. 395). There are two types of 'cross-case' analyses, either *variable-oriented* analysis or *case-oriented* analysis. With variable-oriented analysis, the researcher only takes into consideration specific variables. In this research, we use the case-oriented analysis because the research aims to understand a particular case or several cases by looking closely at the details of each. In this case-oriented analysis, we tried to look for differences and correspondences between the cases, and why choices were made that influenced the impact of the GR. This was done by developing a matrix with several categories that were based on the relevant theoretical and empirical concepts. From these categories we could compare the cases, this comparison is described in §4.2.

4. Case results

In this chapter, we describe the results, gathered from the conducted interviews with the cases. From the analyses, we found several focus areas that were used by the cases. This chapter starts with a description of the 'within case' analyse in §4.1. The case comparison analyses will be described in §4.2 in this paragraph we looked at the focus areas and describe how these were used within each pair and how it affected the impact of the GR.

4.1 Case descriptions

Firstly, we explain the 'within case' analyses of the data. For each case, we give a case description followed by a description of the situation before the GR. Followed by a description of the choices during the GR.

4.1.1 Extreme case one (E-one)

The extreme case of the first pair is a Part Supplier and has 7 employees, in this research we named this case "E-one". E-one started in 1995 with the commercializing of a special technique to develop lenses for human optics. In the following years they expanded their product portfolio by adding technical optics for the defence and security industry.

Before the GR

In the years before the GR started, E-one was focused on the development of markets related to the human optics. However they experienced a sort of decrease in sales; and they decided to enter other optical related markets that were new to them. They used their existing knowledge for the technical optical market. They created lenses for photo cameras and supplied parts to the defence and security industry. They did this to spread the risks of being stuck in a decreasing market. Therefore, they started diversifying.

"In the past, we had on one moment a bit of bad luck just by looking only at human optics. On that moment, we said we should go spread risks. (...) So a little bit of enlargement and diversification". (Manger E-one)

Besides the movement to other markets, E-one is extremely focussed on innovation. According to the manager, this is because they started their business as a development firm. They have several innovation projects in which they try to create a competitive advantage.

“Besides diversification we are busy with development, we started as a development company, (.....) for example 15% of our profit goes directly into research and development”.
(Manager E-one)

With this focus on innovation, E-one tries to involve external parties, whether they are local SMEs, customers, or even international research groups. An example of interacting with customers is that E-one supplies goods to several ophthalmologists. Every month, an employee of E-one visits them and watches a surgery performed by the ophthalmologist. During that surgery, they discuss new optical solutions with the ophthalmologist. E-one is also delivers their products in different countries, to learn from and to get the best feedback.

“So we deliver to ophthalmologists, and to all the teaching hospitals in the Netherlands and in Belgium. However, 60% of the German and 30% of the English teaching hospitals also. Why teaching hospitals, because than you get the most innovative feedback in lens design, new models and needs of ophthalmologists.” (Manger E-one)

As mentioned briefly, E-one is active in several research groups all over the world. With these parties they exchange knowledge and they work together to acquire large orders.

During the GR

From the start of the GR, E-one was not affected. The high level of innovation activities, which they started before the GR, gave a positive effect. They reduced the production time of specific lenses from months to several weeks, compared to their competitors. During the GR, they gained new customers because these customers wanted a shorter delivery time that they could not get with the competitors of E-one.

"At that moment we could show that we could fast and very flexible deliver every product they wanted, we have created a good deal with them so the crisis brought me new customers." (Manager E-one)

During the GR, E-one stayed a diversified firm and they continued diversifying. They do so by launching newly developed products during the GR.

"Yes we developed it before the crisis, we developed the idea and we started developing it three years ago. Now we are finishing the project, I think that we got in September October 2010 the first working machine." (Manager E-one)

Throughout the GR, they kept innovating in order to stay competitive and further improve their technology.

"As a firm you should not say, we are in a crisis so we are going to innovate, I think as a firm you have the obligation to the firm and your employees that you have to innovate despite being in a crisis or not". (Manager E-one)

In addition, the involvement with international research groups is fruitful even during the GR, because with these external parties they acquired large orders from governments and organizations all over the world.

"I recently got a very nice order from an organization in the USA, and if I had not been active with my partners I would never gotten the order to the Netherlands". (Manager E-one)

E-one is also active on several markets that are less affected by the GR at this moment. Besides the medical industry about which we mentioned briefly, they are also involved in some government related industries that have not been affected by the GR up to now.

"We did not feel any trouble from the crisis, because the defence and security industry are a few big markets of us. On those industries, the cuts on spending have not hit the work packages of us". (Manager E-one)

These events made E-one classify the impact of the GR as slightly positive. The main reason for it is that, they gained new customers and they were able to keep their profit growth stable.

4.1.2 Comparison case one (C-one)

The comparison case of the first pair is a Part Supplier and has 2 employees, in this research we named this case “C-one”. They started in 1996 with the repair and maintenance of industrial machines.

Before the GR

In the period before, the GR C-one had enough orders to reach a positive operating income. They had a fixed group of customers for which they provided the maintenance of their industrial machines. C-one works with informal agreements, by making verbal agreements with their customers; C-one does not work with formal agreements e.g. service contracts.

“No, I have never had any service contracts, and I am not going to. (...) Because a service contracts also has negative consequences, because you are obligated to give service, but the advantage of a service contract is that you know that you have a job there next year. But I am more flexible, I have got no obligations, and when I go to a customer they tell me to come again next year. I than call them in the next year at the moment it is most convenient for me. And then they say: ‘o yes, that is fine,’ and we make an appointment, which is just as easy.” (Manager C-one)

C-one has several customers for which they provide the yearly maintenance and reparation of specific industrial machines. Before the GR started C-one did not do anything with diversification, they were focused on one type of service. Although new types of industrial machines were developed, they were not planning to enter those markets. C-one emphasized that it is important for a firm to stick with the business they began with.

“Yes the time, the knowledge are all things you have to invest and money, to buy products. I believe that you could better invest the time to find new customers, that gives more return than putting products on the market, which costs more time and energy.” (Manager C-one)

With respect to innovation before the GR, C-one does not want to invest in new technology

“I had my doubts to do other things. But then, you enter an area which is unknown, where you do not have the knowledge of, and you should not do that. You can do all sorts of things but you have to invest resources, time and money but it is better to reserve them”.
(Manager C-one)

C-one has many competitors, which seem to work together with C-one before the GR. However, only to outsource task which C-one is not capable of completing.

“Sometimes I have customers with urgent repairs, when I cannot perform the task, I outsource it to a competitor or I call someone else. But you do not lose the customer, they will call me again.” (Manager C-one)

During the GR

C-one had several customers and was not troubled at the start of the GR, but eventually the GR severely hit them. Many of their customers decided to do the reparation and maintenance of their machinery themselves. The consequence of this phenomenon was that they experienced a huge decrease of sales, so this decrease of sales resulted in a negative operating income in 2009.

“The impact of the crisis on the firm was severe. In the last quarter of 2009 and at the beginning of 2010 the most, the performance was much lower than before. (...) Sometimes we did not have any work for two weeks”. (Manager C-one)

As already mentioned, C-one was not a supporter of diversification. However, during the GR they started selling a product next to the service they deliver, purely to compensate for the lost revenue. They experience this process as difficult because there are a lot of players on the market who also sell the product.

“We responded by selling another product on another market and try to sell them. But it is hard because there are a lot of players”. (Manager C-one)

Increasing the technical knowledge of C-one is something the manager of C-one has planned for a situation where the GR keeps affecting his firm.

“You have to follow a special class for it to learn the technology. However, I have thought about it. (...) if the crisis keeps affecting my firm it could be an idea.” (Manager C-one)

During the GR, the work for C-one decreased, to further compensate for the lost revenue they work together with a competitor. For this competitor they work for a lower price just to have work.

“For one of my customers I work with a friends firm, I do that for a lower price. Because it is better to earn something, than nothing at all.” (Manager C-one)

The mentioned events made C-one classify the impact of the GR as strongly negative. The main reason for it is that they lost customers and that they could not gain new ones.

4.1.3 Extreme case two (E-two)

The extreme case of the second pair is an Original Equipment Manufacturer and has 199 employees; in this research, we named this case “E-two”. They started in 1949 as a family owned forge. During the fifties, they got in contact with (in Dutch) *rijkswaterstaat*², who was busy keeping the highway snow free. The smith developed a snowplough and spreading equipment for them and eventually started specializing in snowploughs and spreading equipment. The firm was taken over a few times and there were a few changes in the management team, eventually in 2007 the firm was taken over by a Swiss organization, they also changed the name of the firm. At this moment, they still develop snowploughs and spreading equipment that they sell all over the world, and try to find innovative solutions for their products and productions methods.

Before the GR

At the beginning of the 21ste century, they started developing a lean system and outsourced the production of several parts to external parties. In 2007, they implemented

² The (in Dutch) *Rijkswaterstaat* is responsible for the maintains and development of the national network of roads (Rijkswaterstaat, Over ons, 2010).

the lean system, which resulted in an increased production capacity and spare space. Due to the spare production capacity and space, they tried to attract new customers who want to outsource assembly tasks to E-two. However, none of the potential firms wanted to outsource assembly tasks to E-two.

Before the GR started E-two tried to be active with different products specialized in removing snow from the roads. Besides the production of snow ploughs and spreading equipment, they also sell sweepers.

“Due to the fact that the snow removal products are seasonal products we added another product. So we bought a few English and Italian firms specialized in sweepers so we could enter that market.” (Manger E-two)

Besides diversification before the GR, E-two was also innovating; they tried to find innovating solutions to their products but also to the internal processes. The improvement of the internal processes was triggered due to the implemented Lean concept, which they implemented in 2007. With the lean system they can quickly increase their production capacity or lower it.

“We strongly improved the lean concept, in 2005, 2006 we made the biggest step and we implemented the system in 2007 and discussed it with our employees. We also spread the lean system to other departments in the firm. They are all connected to each other, and we became really good at it.” (Manager E-two)

They try to work together with different partners to acquire knowledge not directly available; knowledge about products, but also about improving the internal processes.

“Before the crisis started I thought the purchasing department was weak. Not the employees but how it was organized (...) then I started to look how we could improve the organization and contacted a consultancy firm specialized in purchasing. Together with them and our suppliers we improved the organization and the way the products were bought. This resulted in better prices and a better relationship with our suppliers.” (Manager E-two)

During the GR

Mid 2008, while the GR was growing, E-two decided to fill the spare production capacity and space with production tasks which they had outsourced. Before the GR, they planned to start with this insourcing trajectory for a moment in the future. They expected that this would result in a lot of resistance inside and outside the organization. However, they prompt the insourcing trajectory because of the GR. Therefore, the amount of resistance was little and the insourcing trajectory smoothed.

“Well, then we fastened the insourcing trajectory, we prepared ourselves in 2009 for the insourcing trajectory and we created a budget in order to use the spare space for the insourced activities. Because we had enough activities, we could insource.” (Manager E-two)

Due to the well-developed external relationships with suppliers, external parties, and scholars, they could ease the insourcing trajectory. For example the suppliers who initially did the welding of the metalwork, transformed into the supplier of the metalwork. When there would arise a situation where E-two could not handle the welding, they made an agreement with their suppliers that they would assist them. The external parties and scholars assisted E-two with the insourcing trajectory.

During the GR, they further diversified their product portfolio; they noticed that the market wanted a cheaper model so during the GR they introduced a cheaper model.

“Yes, we just developed a cheaper model (...) however, we tell our customers we do not put our name on it because the quality is lower than you could expect from our brand name. We do give the same service but from a different quality with a different price.” (Manager E-two).

Despite the GR, E-two further improved their innovation capabilities.

“No, we did not decrease the development budget, we increased it. And not only the budget but also the organization around R&D, in a way that they are really busy with development and are not disturbed by other departments.” (Manager E-two)

With respect to their external partners they continue with exchanging knowledge with their partners. The market, on which E-one is active, is a quite stable market, because despite the GR, the government still needs snowploughs and spreading equipment. This resulted in a profitable operating income.

The mentioned events made E-two classify the impact of the GR as slightly positive. The main reason for this is that E-two used the GR as a reason to speed up the insourcing trajectory.

4.1.4 Comparison case two (C-two)

The comparison case of the second pair is an Original Equipment Manufacturer, which has 158 employees; in this research, we named this case "C-two". They started as a family owned forge in 1917. Starting from 1925, they attracted some import rights; they also started with the production of manure spreaders and slurry tanks.

Before the GR

In the years before the GR started, C-two was active in three product groups on one market; feeding, feeding production, and vulture. They sell their product in 20 countries. Just before the GR started, they wanted an extra product group so they added winter-maintenance. This is how they used diversification, to enter other markets.

"We needed a new product group for the end of the year. In 2007 it came on our path so we started with it." (Manager C-two)

C-two tries to be innovative; they have a R&D department where they try to find innovative solutions for problems. For instance, by changing government regulations that have consequences for the market they were active on. By doing, so they try to sell their products to existing customers.

"But if you come with something that shocks the market with a nice adaption or improvement which safes money. Than people are more inclined to invest, we tried continuously to created sales." (Manager C-two)

C-two also tries to improve their internal processes; they try to accomplish this by interacting with different scholars.

During the GR

In 2008 C-two had the best year but in 2009, it decreased dramatically. At the beginning of 2009, they had a few orders left from 2008 but this ended during the summer.

“Look, we saw the consequences of the recession in 2009 from the summer we saw that nothing was bought, for three months there was a kind of radio silence, zero, really zero”.
(Manager C-two)

C-two saw a difficult period coming and they responded by lowering their costs. They removed products that were less profitable, from their product portfolio. In addition, they ended the contracts of employees without a fixed contract.

“We responded to it in September, by eliminating products and looking at the contracts of our employees. We ended the ones without a fixed contract, we moved employees within the firm, and what we could do internally we did internally.” (Manager C-two)

They further diversified internationally during the GR, by searching for countries where they could sell their products. The amount of sale of C-two is linked to the milk prices, these milk prices were also influenced by the GR, therefore during the GR they started looking for markets where the milk prices were protected, they found this protected market in Canada, the entering of this market also limited the damage for C-Two. Therefore, C-two had a break-even operating income.

“So we looked for potential countries. For example Canada, which has a protected market (...) therefore we visited some of these countries which were new for us and eventually entered them.” (Manager C-two)

With respect to the in 2007 attempt to diversify their products by adding the winter-maintenance equipment, they did not get the profit from it they hoped.

“But look as a firm starts in a new market it asks a lot of attention, money, costs, support and energy. No I personally think it cost twice the amount of energy. Entering the new market costs a lot of energy and coping with the crisis cost a lot of energy. And for the environment it looks great, they entered an additional market and that is true, but it did cost twice as much energy and if I look back at it now, knowing what we know now I doubt if we did the same thing.” (Manager C-two)

They further sped their innovation process so they could bring new products to the market, which minimized the damage.

“We continued developing improved products. That was already started and we increased it, because we said: okay now we are in a crisis but in September we need to come with improvements.” (Manager C-two)

During the GR C-two felt the need to further innovate the processes. They try to do so by establishing a group of firms, with who they can share knowledge.

“Internally we spoke about starting a workgroup of 10 or 12 firms from our sector to discuss certain knowledge; How can we help each other by sharing knowledge?” (Manager C-two)

They eventually had a decrease of 8% in sales. This decrease in sales of 8% was quite positive according to the director of C-two, because in the branch where they operate there was an average decline of 30/35%. Therefore, they classified the impact of the GR as slightly negative.

4.1.5 Extreme case three (E-Three)

The extreme case of the third pair is a part supplier and has 30 employees. In this research, we named this case “E-three”. They started in 1979 as a producer of plastic parts; eventually in 2000, the firm was sold to a polyurethane organization.

Before the GR

The market of E-three was mainly in the Netherlands, but in 2003 they expanded it to Germany. E-three produces custom made products using polyurethane.

“For example in 2001 E-three did little with export, they had a few customers in other countries. But they were not found of going to Germany, but I said when you drive 200 kilometers and you are in Amsterdam, but when you drive 200 kilometers the other way you go to Hannover, Dusseldorf and Keulen. (...) Entering the German market gave us a lot of profit from 2004 until now the export to Germany is twelve-folded.” (Manager E-three)

The advantage of polyurethane is that they can produce and deliver a wide range of products to nearly every industry.

“What is special about our firm, is, that we can produce products for nearly every industry (..) We supply goods to the machine building industry, to firms that supply goods to the automotive industry, firms that are in the dredging industry, firms that are in the concrete industry, if you name it we are in it.” (Manager E-three)

With the custom made products they need to be very innovative, so they try to create new products for their customers using polyurethane. For each product they have different compositions of the polyurethane.

“It does not matter which idiot comes to the door, we nearly always have a solution or can develop one. We try to think with the customer to develop innovations and develop problem solving solutions. A customer has a problem with a product, and it does not matter what sort of problem, we always try to develop a custom made solution for them.” (Manager E-three)

Besides working together with customers in creating innovative product, E-three also works together with other research groups to acquire knowledge.

“In Germany you have got a few plastic research groups, in Leipzig there is a good club to work together with, they have a lot of knowledge. We always have worked together with external parties and that is not going to change.” (Manager E-three)

During the GR

From the moment the GR started, the revenue created by the existing customers in the production industry decreased. E-three had anticipated on this decreasing revenue and

therefore they already had changed their plans for the future. They planned to enter the medical industry in 2013, but quickly moved their focus to this market.

“Well you have to anticipate on that, and we communicated it to our sales team. I think we handled it well. We just said, now we do not focus for our usual market, look at markets where we can gain more, for example the medical market. (...) So in 2008 we had a normal grow of 78 per cent, and the funny thing is, in 2009 we also had a growth of 78 per cent. That is one of the reasons that we hired new employees.” (Manager E-three)

The results were that the revenue continued to grow; the new customers filled the lost revenue of existing customers. Besides this phenomenon, E-three also supplies products to a department of the government that does not decrease their orders despite of the GR due to the long-term contracts they have with E-three.

“We make the buoys for (in Dutch) Rijkswaterstaat. They weigh over 380 kilogram, which we produce in our factory. These buoys used to be from steal but (in Dutch) Rijkswaterstaat now wants them made in plastic.” (Manager E-three)

During the GR they kept innovating and further developing their external relationships.

“During a crisis you can say: R&D is expensive, we should lower the costs. When you say that, you do not have the right strategy. Especially during a crisis you should be busy with R&D. Although there was no need for because everything was going fine, we further increased our R&D efforts.” (Manager E-three)

During the GR E-three was able to have a positive operating income and experienced a constant growth and during the GR they gained new customers. Therefore E-three classified the GR as slightly positive.

4.1.6 Comparison case three (C-three)

The comparison case of the third pair is a part supplier and has 28 employees. In this research, we named this case “C-three”. The current managers used to work as floor employees for C-three, however they bought the firm in 2006. C-three is specialized in the fabrication of metal products.

Before the GR

In the years before the GR C-three had a small customer portfolio for which they provide the metalwork.

“When we bought the firm the machinery was quite outdated, the machines were running on their last mile, but that had affected the purchase price. However in the first three years we did fine, we were in a growing market.” (Manager C-three)

As already mention, in 2006 the current managers bought the firm from the previous owner. C-three is a production company that is specialized in metalworking. Starting from 2006 the current owners renewed the firm due to the dated machinery.

“But in the time before the crisis we invest in new machinery and modernized the machinery.” (Manager C-three)

C-three also works together with external partners to acquire orders and to outsource work they cannot perform.

“By working together you only get better we search for partners that are in different areas, by doing so you do not tease each other. You only get stronger of it, and you can get orders from large firms.” (Manager C-three)

During the GR

At the start of the GR C-three was not affected by the GR; however, the big hit came at the end of November. Starting from this period, the small amount of customers of C-three decreased their amount of orders. This resulted in a decrease of 30/35 per cent of revenue.

“For example, if you have 20 customers and they all have their own product, and the market collapses than you have 20 times a problem. Because with 20 customers, one has a decrease of 30 per cent, one has 20 per cent less work, than you as a supplier feel it tremendously. Your revenue decreases with 30 35 per cent.” (Manager C-three)

The worst period lasted for more than three months, in that period they began with requesting (in Dutch) *deeltijd ww*³, after this period was over they asked a second period of (in Dutch) *deeltijd ww*. Sadly, enough they needed to fire 4 employees. The operating income for C-three was negative in 2009. To recover from this period of decline they visited existing customers but C-three also tried to attract new ones by trade fairs.

“Well, first we looked at existing customers and we are now also on trade fairs to find new customers. See when you are very busy with your organization; it is wise to have a strategy to cope with less busy times. That you go to other markets you know, but we did not have the time for that the first 3 years, we needed to work 60 hours per week (...) we try to find new markets in order to get more customers”. (Manager C-three)

In the same period, they ended the improvement of their machinery, in order to minimize their costs.

“Of course our plan changed, things we did not have to buy immediately, we postponed”. (Manager C-three)

With respect to their external partners, C-three is planning to continue using their external partners for acquiring work.

“We go to meetings of the VMO. Then it is easier to sell your products you know them, and they say come visit us next week and then it is easier to visit them because you know each other.” (Manager C-three)

³ The (in Dutch) *deeltijd ww*, is a special regulation created by the Dutch government for employers. By using this regulation, firms can keep employees which they should have fired due to the GR. They can request this ‘*deeltijd ww*’ during the GR when they do not have sufficient work or decreased revenue. The employee gets an income from the government and after a certain period the employee comes back into the firm (Tijdelijke regeling *deeltijd-WW*, 2010).

These events resulted in that C-three classified the impact of the GR as strongly negative. This was mainly due to the fact that their sales decreased tremendously and they could not find new customers.

4.2 Comparing the cases

For every case, it counts that they did more than one thing to cope with the GR. In some cases they did more with the different focus areas before the GR and just continued doing that during the GR, because the results were good. Or they did not change anything because they did not have the resources to change. In this paragraph we describe the focus areas and compare them between the pairs. For each focus area we will describe the differences between the cases, followed by a description of the overall pattern in the focus area. Starting with diversification in §4.2.1, followed by innovation in §4.2.2 and subsequently the way the organization interacted with their external relationships in §4.2.3. Besides the three focus areas we also found during the analysis some additional findings, concerning long-term contracts which are described in §4.2.4 and the willingness to change described in §4.2.5.

4.2.1 Diversification

In the majority of the cases there was some kind of diversification, the way diversification was used differed considerably between the extreme cases and the comparison cases (table 5).

| Case name | Impact of the GR | Type of diversification | Intensity of diversification before the GR started | Development of the diversification intensity, during the GR |
|-----------|-------------------|-------------------------|--|---|
| E-one | Slightly positive | Product | High | Increased |
| | | International | High | Stable |
| C-one | Strongly negative | Product | None | Increased slightly |
| | | International | None | Stable |
| E-two | Slightly positive | Product | Medium | Increased |
| | | International | High | Stable |
| C-two | Slightly negative | Product | Medium | Decreased |
| | | International | Medium | Increased |
| E-three | Slightly positive | Product | High | Increased |
| | | International | Medium | Stable |
| C-three | Strongly negative | Product | None | Stable |
| | | International | None | Stable |

Table 5. Overview of the diversification focus area

During the analyses of the data it became clear that the extreme cases find diversification an important topic, whether it is product, or international diversification. The majority of the comparison cases dealt differently with diversification, especially in the way of entering the GR diversified or starting diversifying during the GR. For each pair we will elaborate on the differences. We end this paragraph with an overall comparison of the cases.

First pair

In the first pair, E-one was a diversified firm long before the GR started. E-one had learned from the past that looking at one market creates uncertainty, by being active on more than one market; they try to spread the risk of being stuck in a declining market. Besides product diversification, they also tried to be active in different countries. By using international diversification, they tried to spread the risk of being stuck in a decreasing market of one country. E-one tries to maximize international diversification as much as possible through

their external relationships, they emphasize that international diversification is an important theme, and that they even benefited from international diversification during the GR.

Comparing the way E-one values diversification with the way C-one does, we see an important dissimilarity. Before the GR started, C-one did not see diversification as an important factor. They were focused on one market with one type of service. During the GR the amount of work decreased. To fill the spare time C-one decided to start selling product in order to create some profit. Therefore, they increased the level of diversification slightly by adding one product.

Second pair

With regard to the second pair we found a similar situation, but not as extreme as in the first pair. Comparable as with E-one in the first pair was E-two diversified before the GR started. They had many types of products on different markets. Besides being active with several products on different markets, before the GR started, they also were active in different countries.

Comparing E-two with C-two, we found that before the GR started, C-two also used diversification but on one market in many countries all over the world. Just before the GR began, they started diversification on a different market. C-two did this to fill spare production capacity. As already mentioned earlier, the GR had a slightly negative impact on this case. During the GR, the amount of products they sell was minimal because the amount of sale was linked to a fluctuating index. During the GR, they looked for countries where this fluctuating index was protected and kept on a stable level. C-two found this stable market in another country where they were not active before the GR. With respect to the diversification focus area, we found little difference between these two cases.

Third pair

In the third pair we found a similar difference as in the first pair. E-three is focused on many markets, in many countries before the GR and increased this when they saw the GR developing. They started this amplification of product diversification because they expected that the markets, on which they were active, would decrease tremendously.

With regard to C-three, we found that this case did little with product diversification before the GR started. They did not have the resources to start diversification before the GR. On the moment the GR started, and it began to affect their organization, they saw the necessity of it and tried to find new markets they could enter.

Overall comparison

Before the GR started it can be said that there is a large distinction concerning diversification between the extreme cases and the comparison cases. The extreme cases were diversified before the GR started. Comparing the extreme cases with the comparison cases we found that the comparison cases were diversified on a lower level before the GR.

During the GR the extreme cases kept being diversified and on some points they even increased their diversification level. The comparison cases saw the need of being diversified during the GR and tried to increase their diversification level. However because the GR was at its peak and the amount of sales of products dropped, it was hard for the comparison cases to diversify. They experienced this diversification process as difficult.

4.2.2 Innovation

During the analyse we found that innovation differs between the cases and influenced the impact of the GR on the cases (table 6). We will discuss for each pair how the innovation focus area differed. We end this paragraph with an overall comparison of the cases.

| Case name | Impact of the GR | Type of innovation before the GR | Intensity before the GR | Difference in the intensity during the GR |
|----------------|-------------------|----------------------------------|-------------------------|---|
| E-one | Slightly positive | Product | High | Stable |
| | | Process | High | Stable |
| C-one | Strongly negative | Product | None | Stable |
| | | Process | None | Stable |
| E-two | Slightly positive | Product | High | Increased |
| | | Process | High | Stable |
| C-two | Slightly negative | Product | High | Increased |
| | | Process | Low | Stable |
| E-three | Slightly positive | Product | High | Increased |
| | | Process | High | Increased |
| C-three | Strongly negative | Product | None | Stable |
| | | Process | High | Decreased |

Table 6. Overview of the innovation focus area

First pair

A difference in the innovation focus area was present with the first pair. E-one is very focused on innovation which they started long before the GR on a high level. They started as a development company and kept innovating ever since. When looking a little bit deeper in their way of innovation, we found that they have experienced innovation as an advantage before the GR and during the GR. This experience came due to the combination of being innovative and the impact of the GR, which created a competitive advantage. That is one of the reasons that they experienced the impact of the GR as positive. During the GR, it gave them new customers due to the advanced production method. In addition, they have a few product innovations that are waiting to be launched.

The complete opposite is present in C-one, which, before the GR, did not see the need to innovate, because they got enough work. During the GR, the amount of work decreased. The manager did not see the need to innovate during the GR, they would start innovating only when the GR kept affecting his firm.

Second pair

In the second pair, E-two was focused on the innovation of their processes, and on the innovation of their products before the GR started. During the GR, they could introduce a new model and their current products were comparable with does of their competitors concerning price. With the high level of innovation of their processes, they were able to quickly adapt their production level and costs in relation to the request of the market. This made gave them an advantage during the GR.

The same positive aspect of putting an innovation on the market during the GR was found with C-two. Before the GR started, C-two used innovation, but during the GR they increased their innovation activities. During the GR they launched several innovations, which helped them thru the GR. The amount of innovation of processes was low compared to the amount of E-two and this did not change during the GR.

Third pair

Looking at the third pair, we see that innovation is present in both cases. E-three used innovation before the GR to improve their production processes and to further improve

their product. On the moment the GR started, they intensified their innovation intensity by doing more product research.

C-three focused before the GR on process innovation, they created processes to produce faster and to be able to produce different products. During the GR, they stopped this innovation process because they needed to decrease their costs.

Overall comparison

If we compare all the cases, we found an interesting pattern. Before the GR started, the extreme cases were all busy with product and process innovation. Their main reason for it was to have a competitive advantage over their competitors and to minimize the production costs. Comparing this to the intensity of innovation of the comparison cases, we found that this intensity was of a much lower level compared to the extreme cases.

During the GR, the extreme cases could profit from their innovation activities by launching new or improved products. This resulted that the extreme cases kept their customers and some even gained new ones. With their innovative activities, concerning their process they could save costs and were able to change to the increased competitive environment. Comparing this with the comparison cases, we found that they did their best in trying to keep their customers but they did not succeed, due to the competitive advantage of their competitors. However, C-three had a high intensity of innovating the processes before the GR started. Based on the findings of the extreme cases one would suggest that this would result in a competitive advantage for C-three. However, this was not present because C-three innovated their processes to update the capabilities of the machinery to a level which is comparable with their competitors due to the out-dated machinery they had. This did not lead to a competitive advantage.

4.2.3 External relationships

During the analyse we found that the external relationships differ between the cases and influenced the impact of the GR on the cases (table 7). We will discuss for each pair how the external relationships differed. We end this paragraph with an overall comparison of the cases.

| Case name | Impact of the GR | Works together with before the GR: | Importance of external parties before the GR | Works together during the GR with: | Importance of external parties during the GR |
|----------------|-------------------|---|--|---|--|
| E-one | Slightly positive | - Research groups - Universities - Local firms - Customers | High | - Research groups - Universities - Local firms - Customers - Joint venture | Increased |
| C-one | Strongly negative | - Local firms - Branch organization | Low | - Local firms - Branch organization | Stable |
| E-two | Slightly positive | - Local firms - Universities - Consultancies - Customers - Suppliers | High | - Local firms - Universities - Consultancies - Customers - Suppliers | Stable |
| C-two | Slightly negative | - Universities - Consultancies - Suppliers - Branch organization | Medium | - Local firms - Universities - Consultancies - Suppliers - Branch organization | Increased |
| E-three | Slightly positive | - Universities - Suppliers - Customers - Branch organization - Local firms - Research groups | High | - Universities - Suppliers - Customers - Branch organization - Local firms - Research groups | Stable |
| C-three | Strongly negative | - Local firms - Branch organization | Low | - Local firms - Branch organization | Stable |

Table 7. Overview of the external partnership focus area

First pair

E-one mentioned the value of having partners, frequently during the interview, they are active in many local and international research groups where they work together with suppliers and scholars. In the research groups, they try to improve their knowledge and work together to acquire large orders. These research groups consist of international partners but also with local partners, they work together with different organizations in the region to improve their knowledge and to acquire resources not directly available to them.

Comparing this with C-one, we found that the amount of cooperation between them and their partners is minimal. This case sees external relationships as useful in situations where the resources are not directly available to perform a task, but not to improve products or to acquire knowledge not directly available to them. This case is active in network groups in this case the VMO; their goal is to acquire orders. This case does emphasize the importance of visiting network groups due to the informal atmosphere, which makes it easier to get in contact with other organizations for attracting customers.

Second pair

When comparing the first pair with the second pair we found the same phenomena but with a slightly different impact. E-two finds the use of external relationships a good method to acquire knowledge not directly available to them, especially when resources/knowledge is costly, they acquire this by working together with other firms, which are in the same organization as they are. This makes it easier to acquire missing resources. The organization also sees this advantage of internal communication and tries to improve this. Besides the fact that E-two works together with other firms in the organization they also work closely together with consultancies and colleges to acquire knowledge.

C-two found during the GR that having external relationships has advantages, they are planning to intensify this by looking for organizations, which are similar to them but are not direct competitors, and together with these organizations, they want to form a group where they can exchange organizational and strategic knowledge. Comparing this with E-two we found that before the GR, the value of the external partners was higher with E-two than it was with C-two.

Third pair

In the third pair, we see a similar phenomenon as with the first and second pair. The importance of having external relationships is higher with E-three than with C-three. E-three works together with suppliers and customers on a high level to create innovative products. They acquire the knowledge they do not have by using the knowledge of their suppliers and customers.

C-three is similar as C-one, the amount of external relationships is little and they both see the advantage of external relationships but only in a way to achieve sales or to outsource work, and not as with the other cases to acquire knowledge.

Overall comparison

When we compare all the cases, we found an important dissimilarity. The extreme cases were interacting with their external partners before the GR started. The extreme cases had this high level of external relationships in order to support their diversification and innovation activities but also a way of acquiring large orders. The comparison cases used their external relationships mainly to sell their products. Their intentions were not to cooperate, but to sell their products.

During the GR, the extreme cases kept their external relationships intact. C-two saw the advantages of having external relationships and therefore they tried to establish external relationships further, so they put the focus more externally. The other comparison cases did not see the advantages of having external relationships for more than only selling their products. The extreme cases seemed to benefit from their external partners because they got the possibility of acquiring knowledge and cooperation on the development of their innovation activities, which gave them a competitive advantage.

4.2.4 Long-term contracts

Besides the findings concerning the three focus area's we also found some additional findings. We found dissimilarity between the amounts of long term contracts with customers or governments, there are differences between the cases (table 8).

| Case name | Operating income before the GR | Long-term contracts present | Operating income during the GR | Impact of the GR |
|----------------|--------------------------------|-----------------------------|--------------------------------|-------------------|
| E-one | Positive | Yes | Positive | Slightly positive |
| C-one | Positive | No | Negative | Strongly negative |
| E-two | Positive | Yes | Positive | Slightly positive |
| C-two | Positive | Yes | Break-even | Slightly negative |
| E-three | Positive | Yes | Positive | Slightly positive |
| C-three | Positive | No | Negative | Strongly negative |

Table 8. Overview of the long-term contracts

All the cases experience some kind of uncertainty due to the GR, with respect to sale. Despite this uncertainty, there is difference between the cases in the amount of uncertainty. Comparing the amount of long-term contracts of the sale of the comparison cases with those of the extreme cases, we found that the extreme cases had more long-term contracts than the comparison cases. Remarkable enough the extreme cases were able to sell their products despite the GR. For each pair we will elaborate on the differences. We end this paragraph with an overall comparison of the cases.

First pair

An example of the situation of these long-term contracts is present with E-one. They supply medical equipment to several ophthalmologists, and have contracts with several teaching hospitals. Besides the medical equipment, E-one also supplies products to government related projects, which despite the GR will continue due to the long-term contracts.

Comparing this to C-one, we found that C-one does not have service contracts with their customers. The consequences are that C-one is very flexible; however, their customers are also flexible. Therefore, during the GR the customers decided to do the service and maintenance themselves, which resulted in a decline in sales for C-one.

Second pair

With regard to the second pair, we found a similar sort of long-term contracts, as with E-one, E-two is a supplier of products to the government. Despite the GR, the government still needs the products because during the winter the roads need to be snow free. They further need to maintain their snowploughs and spreading equipment, which results in sale of spare parts despite the GR.

With respect to C-two we found that before the GR started, they did not supply products to the government. They entered this market just before the GR but were unable to profit from it. C-two also sells spare parts, which are needed despite the GR. The difference between E-two and C-two is that E-two has a lean system, which allows them to quickly change their production capacity depending on the time in the year. This lean system is not present by C-two, they have a fixed amount of production capacity, which makes it hard for them to adapt their production capacity.

Third pair

Similar as with E-one we found with E-three that they also have long-term contracts. Before the GR started they already supplied products to the government, based on contracts. They also had these agreements with dentists for which they supply special products. Therefore they were able to minimize the risk of declining revenue.

With regard to C-three, we found the opposite; they had a small amount of customers for which they produce the products. C-three did not have long-term contracts with these customers, eventually their customers lowered during the GR their orders and C-three needed to save costs in order to survive. They would have minimized their problems if they had had contracts with their customers.

Overall comparison

Comparing all the cases we found that the extreme cases all had some long-term contracts. With these long-term contracts, they could create a stable revenue and could increase this with short-term contracts. Most of the comparison cases did not have long-term contracts therefore the customers were not required to buy products, which resulted in decreased revenue.

4.3 Conclusion

As this chapter made clear, that, the interviews resulted in valuable data for exploring the way the SMEs dealt with the GR. In this chapter we presented a 'within case' analysis in §4.1 where we described the cases separately. We found that the impact of the GR differed between the cases and that despite the negative aspects of the GR there are also several ways to limit the damage, or even to benefit from the GR. What the differences are between the cases, was explained in §4.2 where we described the 'cross case' analysis by looking at all the cases and by trying to compare them to find those differences that contributed to the positive impact of the GR. In the next chapter, we will discuss the answers to the research questions.

5. Discussion

This multiple case study explored the reasons for difference in the impact of the GR on production SMEs in the eastern part of the Netherlands. In this chapter we will describe the conclusion of the research in §5.1, in this paragraph we will answer the central research question, in order to achieve the objective of this research. This is followed by §5.2 where we will discuss, the limitations of this research. At the end of this chapter in §5.3 we provide suggestions for further research.

5.1 Conclusions

In chapter 4 we described the way the cases responded to the GR. By firstly explaining what the situation was before the GR. Secondly how they responded during the GR. In this chapter we answer the final research question *‘What are the essential differences between small and medium sized enterprises in relation to the impact of the global recession they faced?’* which is discussed in §5.1.1. The central question *‘why there is a difference in the impact of the global recession between comparable production companies situated in the eastern part of the Netherlands?’* will be answered in §5.1.2.

5.1.1 Essential differences between the SMEs

In order to see what the essential differences in impact were between the cases we compared them to each other with a ‘cross-case’ analysis. The information from the interviews was obvious; there is more than one reason that explains the difference in the impact of the GR. The extreme cases entered the GR differently than the comparison cases and made different choices during the GR. Therefore we firstly discuss the differences between the cases before the GR, followed by how they differed during the GR. At the end of this paragraph we describe an overall comparison.

Situation before the GR

During the analyses, we found that the extreme cases were more diversified compared to the comparison cases. Before the GR, the comparison cases also used diversification but on a lower scale than the extreme cases. The extreme cases were also more innovative compared to the comparison cases. The extreme cases could reach this high level of diversification and innovation through the use of their external relationships which they

used for more than only selling their products. The comparison cases did not use their external relationships as intensely. By having diversity in their external relationship portfolio with which the cases collaborate, they increased the innovation performance of the firm, this is in line with the research of Faems et al. (2005).

The difference in the way the cases entered the GR can be explained by the strategic typology of Miles et al. (1978). They define four types of strategies, the prospector type corresponds with the extreme cases of this research. A prospector is focused on finding and exploiting new product and markets opportunities. Innovating products and market development are also important for a prospector (Miles et al., 1978).

The comparison cases entered the GR with a defender strategy which is described by Miles et al. (1978) as firms producing only a limited set of products directed at a narrow segment for the total potential market. A defender tries to defend its' customer portfolio by competitive pricing or high quality products. Defenders also ignore developments and trends outside of their domains. They focus on market penetration and a limited amount of product development (Miles et al., 1978).

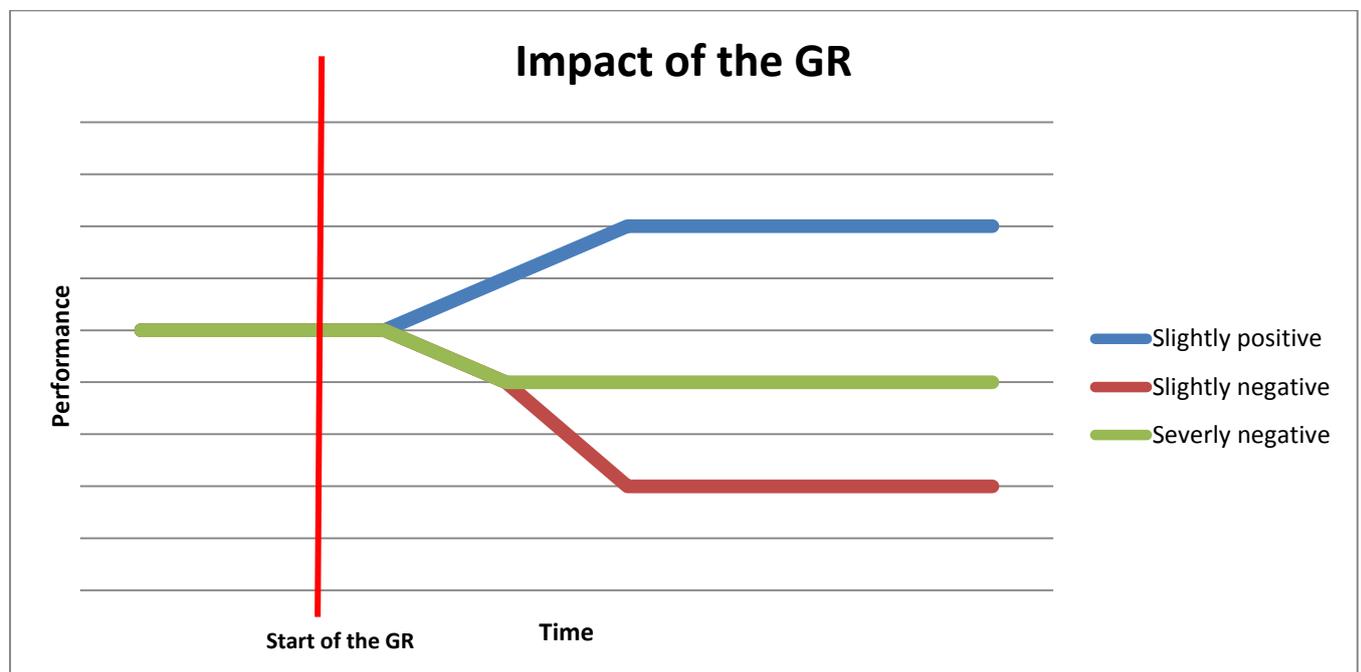


Figure 2. Timeline of the GR with the impact of the cases

Response during the GR

During the GR, the extreme cases kept their prospector strategies and on some points, they even increased it. They increased their diversification and innovation activities with the help of their external partners. This resulted in stable revenue and a positive operating income, also because of the long-term contracts present at the cases. By using their external relationships, the extreme cases could sustain the competitive advantage during the GR. In figure 2 we displayed the consequences of the GR for the extreme cases experiencing the GR as slightly positive.

Comparing this to the comparison cases, which experienced the GR as strongly negative, we found that they had kept their defender strategy. They lost their customers because they did not have long-term contracts or a competitive advantage which would have minimized their losses. This resulted in strongly decreased revenue and a negative operating income, which is shown in figure 2.

We further found that although the impact of the GR could be strongly negative, this could be minimized. This was the case with one of the comparison cases. This comparison case responded in an offensive way by changing their strategies from a defender to a prospector while entering the GR. They increased their innovation activities and tried to diversify. This minimized the damage of the GR. This case experienced the GR as slightly negative, which is shown in figure 2.

Some literature has mentioned that the size of a firm could also be a factor influencing the impact of an environmental change. Because when firms become bigger, they become more prone to forces of bureaucratic inertia (Tornatzky et al, 1990 in Tan & See, 2004). As organizations increase in size, they emphasize predictability, formalized roles and control system. Organizational behaviour becomes predictable, rigid and inflexible (Quinn & Cameron, 1983). Large firms have invested in plant, equipment and specialized personnel constitute assets that are not easily transferable to other tasks and function. However, if a large firm could be flexible they would easier cope with an environmental change like the GR. This was the case with E-two, which was a large firm but flexible, which minimized the impact of the GR. Comparing this with C-two which was not as flexible and this resulted in a slightly negative impact of the GR.

Overall comparison

| | Impact of the GR is slightly positive | Impact of the GR is slightly negative | Impact of the GR is severely negative |
|--|---------------------------------------|---------------------------------------|---------------------------------------|
| Case names | E-one E-two E-three | C-two | C-one C-three |
| Operating income during the GR | Positive | Positive | Positive |
| Level of diversification during the GR | High | Medium | Low |
| Level of innovation activities during the GR | High | Medium | Low |
| Importance of external partners during the GR | High | Medium | Low |
| Long-term contracts present | Yes | Yes | No |
| Strategic type before the GR | Prospector | Defender | Defender |
| Strategic type during the GR | Prospector | Prospector | Defender |

Table 9. Implications

In table 9 we displayed the differences between the cases and the impact of the GR. The extreme cases responded to the GR mainly by continuing their prospector strategies which they already had before the GR. This resulted in a slightly positive impact of the GR.

The comparison cases responded differently to the GR, either as a defender or as a prospector. Important here is that the defender way resulted in a strongly negative impact of the GR. Changing the strategy at the start of the GR to a prospector strategy minimized the damage for C-two and it resulted in a slightly negative impact of the GR.

To wrap up, firms that enter an environmental uncertainty, with a prospector strategy have a chance of minimizing the severely negative impact of the GR. They might even get a positive impact of the GR (figure 2).

5.1.2 Main conclusion

For SMEs it can be difficult to cope with a changing environment, especially when that changing environment has the impact of an avalanche change. Due to the quick and severe change in the environment the SMEs needed to make different choices. The SMEs of this research, on which the GR had a positive impact made different choices compared to the SMEs that experienced the GR as strongly negative.

In this research we looked at the different focus areas of the SMEs. The first focus which affected the impact of the GR for the extreme cases was diversification. Whether it is product or international diversification, the extreme cases used it to spread risks. Although some of the comparison cases also used diversification, they did not use diversification on the scale the extreme cases did. The extreme cases used diversification before the GR, therefore they had the experience and just continued with the diversified set of products during the GR. The comparison cases tried to limit the damage by starting diversification during the GR. Therefore, starting diversification before an environmental change can be useful to avoid the risk of getting stuck in a declining market during an environmental change.

Innovation was also a focus area we found that seems to influence the impact of the GR, due to the differences between the extreme and comparison cases. The extreme cases were capable to launch innovative products or production methods during the GR. This resulted in a sort of first mover advantage. With this first mover advantage the extreme cases could cope with the decline in revenue from existing customers either by compensating with different markets or acquiring new customers due to the innovation. Innovation might even helped in establishing long-term contracts with their customers which created a stable income during the GR. Due to the avalanche change, the markets came under pressure which lowered the demand. The extreme cases had innovative products or process, which made them more attractive for potential buyers. The comparison cases used innovation before the GR but on a different scale than the extreme cases. They could not get the first mover advantage, which resulted in decline of their revenue.

An explanation for the high level of diversification and innovation can be found with the way the SMEs dealt with their external relationships. The extreme cases used their external relationships for more than only acquiring leads. The extreme cases used their external

relationships to acquire resources and share knowledge. By doing this they had more possibilities to speed up innovation trajectories and diversification.

The biggest challenge for SMEs is to deal with environmental change. However, an even bigger challenge is the question of how to prepare for an environmental change. This GR will not be the last one and we still do not know if there will be a second severe impact. In short, SMEs can learn from the GR and prepare themselves for the following environmental change. Possible ways of preparing for an environmental change are given in chapter 6.

5.2 Limitations of the research

In this paragraph we will give an overview of these limitations and their affection of the research. The first limitation can be found in case selection; the extreme cases were selected based on how they experienced the impact of the GR. The answer to this question was on basis of a four point Likert scale ranging from strongly positive to strongly negative. The question that can be asked here is: when is the impact of the GR positive or negative for your organization? Is it positive at the moment you gain new customers? Or is it positive when you lose revenue of your existing customers and gain new ones which compensates for the loss? Therefore there is a possibility that more firms experienced the GR as positive.

A second limitation would be to generalize this research. We only compared a small amount of production SMEs, all located in the eastern part of the Netherlands. Therefore we cannot simply generalize the findings to other industries and countries.

5.3 Suggestions for further research

During the research, we quickly came to the first suggestion for further research, which is to look how the cases came through the GR afterwards. Especially to see if the cases that experienced the GR as positive, still see it that way. Moreover, if they will continue to follow their strategy. Despite the cases that consider the GR positive, it is also interesting to see if the strategies followed by the cases, resulted in the expected results.

Secondly, a suggestion for further research is, to compare SMEs on which the GR had a positive impact with SMEs that went bankrupt during the GR. This would have led to better insights in the reason why the impact of the GR differed.

A final suggestion for further research is, to conduct a follow-up research. In this research, there should be a wider scope, which could give more insights in the focus areas. With the outcome of the research, SMEs can learn from the past and adapt their strategies.

6 Implications

This research has some interesting findings, and although they will need further research, they could help SMEs prepare for future environmental changes. There are two scenarios that could arise in the future, these will be explained in §6.1 followed by a description of possible ways to respond.

6.1 Implications for SMEs

The first scenario that could occur is when the GR slowly ends and the economy retrieves the level it was before the GR. This scenario sounds nice, but based on the business cycle (Hartley et al., 1998) we can predict that at a certain moment in time, there will be a new kind of recession or another type of environmental change. A second scenario is the risk of a double dip, which means that there will be a second hit quickly after the GR (Roubini, 2009). There is a reasonable chance that there will be a second hit, because the economy shrank in the third quarter compared to the previous four quarters (ANP, 2010).

First scenario

In the first scenario, where the economy gets back to its' old level, SMEs could do the following to minimize the damage: At the end of the GR, these SMEs should try to establish relationships with external partners. They could stimulate this by investing in innovation and diversification, which could be attractive for potential external partners. Then the external partners can be used to improve the innovation and diversification activities. With the innovation activities, the SMEs are capable of keeping their products and processes up-to-date. By showing customers that the SME is diversified and is busy with innovating, might help in establishing long-term contracts. This minimizes the impact of a future environmental change.

Second scenario

In the second scenario where there would arise a second dip, SMEs could do the following to minimize the damage: During the end of the first dip, the amount of finance of SMEs is minimal, the resources cannot be spent on innovation or diversification. Therefore, the SMEs should try to acquire resources on a cheap way. This can be done by establishing external partners who can compensate for the missing resources. The SMEs could find these

external partners with the help of the VMO. By establishing external partners, the SMEs can increase their innovation and diversification activities, what could help SMEs in establishing long-term contracts. This would minimize the damage from a possible second dip.

Although these implications are just suggestions to improve the firms, it is not a guarantee that by applying them, the firm would have a positive impact of a possible second dip or a new recession. However, it would be a way of minimizing a severely negative impact of a possible new environmental change.

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Appendix 1 Interview protocol (in Dutch)

4. Case studie vragen/onderwerpen

Interview protocol

Noteren:

- Tijdstip interview
- Wel/geen derden aanwezig
- Plaats van het interview
- Naam geïnterviewde
- Casenummer

Gespreksintroductie

Goede.... mijn naam is Erik van Beek en ik studeer Bedrijfswetenschappen aan de Universiteit van Twente.

Op dit moment ben ik bezig met het afronden van mijn opleiding met als afstudeer richting innovatie en ondernemerschap. Hiervoor doe ik een afstudeeropdracht, wat ik uitvoer binnen de Universiteit. Met mijn onderzoek wil in kaart brengen hoe MKB productie bedrijven omgaan met de Financiële crisis. Om hier meer duidelijkheid in te krijgen voer ik een zogenaamde multiple case study uit bij bedrijven die mee gedaan hebben aan de innovatie scan welke georganiseerd was door het VMO.

Doormiddel van dit interview hoop ik een beter inzicht te krijgen in de gevolgen van de financiële crisis en hoe u hier mee bent omgegaan.

Dit interview wordt opgenomen, zodat er voor mij geen informatie verloren gaat en zodat ik niet hoeft te schrijven tijdens het interview.

Deze opname wordt alleen voor mijn onderzoek gebruikt en zal volledig anoniem zijn. Mijn onderzoek baseert zich op conclusies van alle interviews. Eventuele citaten zijn anoniem. Tevens zal ik het interview naar u toesturen zodat u de gelegenheid heeft om mij te controleren.

Het interview duurt zo rond een uur om alle zaken aan bod te kunnen laten komen. De opname zal ik gebruiken om dit interview zo correct mogelijk te verwerken daarna wordt de opname gewist.

Zijn er opmerkingen of vragen naar aanleiding van het voorafgaande?

Het interview is als volgt opgebouwd. Allereerst komen enkele vragen over de eigenschappen van uw bedrijf. Vervolgens zijn er enkele vragen over de impact van de crisis en de reactie daarop.

Als alles duidelijk is dan zou ik nu graag beginnen.

Algemene vragen

Introductie

1. Kunt u kort iets meer vertellen over het bedrijf (hoe is het ontstaan, missie van het bedrijf, belangrijkste bedrijfsactiviteiten)
2. Kunt u wat meer vertellen over uw functie binnen het bedrijf.
3. De bedoeling van dit interview, is om meer te weten te komen over hoe **bedrijfsnaam** om is gegaan met de financiële crisis. Zou u eens kunnen toelichten op welke manier uw bedrijf last heeft gehad van de financiële crisis?

Gevolgen

4. Wanneer kreeg uw bedrijf last van de crisis?
5. Welke gevolgen hadden de problemen van de financiële crisis voor **bedrijfsnaam**?
6. Hoe bent u met deze problemen/uitdagingen omgegaan?
7. Heeft u de crisis zien aankomen?
8. Hoe heeft u hier op ingespeeld?
9. Verwacht u dat de crisis nog lang blijft?
10. Neemt u maatregelen om hierop in te kunnen springen?
11. U gaf in het innovatie onderzoek aan dat de impact van de crisis **zeer negatief** was, kunt u meer vertellen over waarom het als **zeer negatief** heeft ervaren?
12. Wat waren de gevolgen hiervan?

13. Bij de vraag van het innovatie onderzoek gaf u aan dat uw bedrijf **3 tot 5 directe** concurrenten heeft is dit aantal hetzelfde gebleven?
14. Heeft u tijdens de crisis meer last van uw concurrenten?
15. Wat waren de gevolgen hiervan?
16. Hoe heeft u hier op ingespeeld?
17. In het innovatie onderzoek gaf u aan dat u concurreert in uw markt op **kwaliteit, prijs en levertijd**, is op een van deze aspecten meer druk komen te liggen door de crisis?
18. Lag voor de crisis de punten waar op u concurreert ergens anders bijvoorbeeld meer op **imago dan op levertijd**?
19. Wat waren de gevolgen hiervan?

20. Is het sinds de start van de crisis moeilijk om de vraag naar producten te voorspellen?
21. Was dit voor de crisis anders?
22. Wat waren de gevolgen hiervan?
23. Hoe heeft u hier op ingespeeld?
24. Bent u van plan om producten verder te ontwikkelen of nieuwe producten aan het assortiment toe te voegen?
25. Was u dit voor de crisis ook van plan te doen?
26. Wat is voor u de grootste reden om wel/niet te gaan innoveren?
27. Ziet u dit als een voor of als een nadeel in tijden van crisis?

28. U gaf in het innovatie onderzoek gaf u aan dat er X mensen in dienst zijn bij uw bedrijf. Is het aantal veranderd sinds de start van de crisis?
29. Overweegt u hier verandering in aan te brengen?
30. In de innovatie scan gaf u aan dat X van uw medewerkers in 2009 bezig waren met O&O activiteiten, is dat aantal beïnvloed door de crisis?
31. Was dit aantal voor de crisis hetzelfde?
32. In de innovatie scan gaf u aan dat er I, on-the-job opleidingen (op de werkplek), Externe opleidingen (door externe opleiders) werden gegeven voor werknemers in 2009. Was het voor de crisis anders?
33. Wat verwacht u in 2010 aan opleidingen te doen?

34. In het innovatie onderzoek gaf u aan dat u samenwerkt met klanten, adviesbureaus, leveranciers, bedrijven in een andere bedrijfstak voor o&o activiteiten. Was dit voor de crisis ook het geval?
35. Waarom heeft u ervoor gekozen om samen te werken?
36. Waarom heeft u voor deze partijen gekozen om samen te werken?
37. Ziet u het als een voor of nadeel om tijdens de crisis samen te werken?
38. Bent u van plan de samenwerking verder uit te breiden?
39. Bent u van plan de samenwerking uit te breiden naar universiteiten of hogescholen?
40. Is dit alleen voor O&O of ook op een andere manier?

Afsluiting

41. Wat heeft u geleerd van de financiële crisis?
42. Algemeen gezien, wat zijn volgens u de belangrijkste uitdagingen waarmee MKBs geconfronteerd worden wanneer ze te maken krijgen met een financiële crisis
43. Wat zijn volgens u essentiële acties die managers van MKBs moeten ondernemen wanneer ze succesvol met financiële crisis om willen gaan?
44. Is het mogelijk dat wanneer ik nog aanvullende vragen heb, ik deze telefonische of via de email mag stellen?
45. Heeft u zelf nog opmerkingen, suggesties of vragen?

