Local sourcing practices at production companies in the region Twente

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ABSTRACT
For a long time global sourcing was seen as the next big thing. It helped companies to create more efficient resources and gain a competitive advantage. But after a while some limitations became prevalent for global sourcing such as higher transport costs, maintenance costs and quality costs. There was another phenomenon why the importance of global sourcing began to lag and that was the increasing importance of sustainability. This made that a new sourcing strategy became popular which was local sourcing. Yet there is still a lack of research on local sourcing. Therefore the focus in this study is on finding out which products are often sourced locally and which sourcing practices companies use in their relations with local suppliers. Three theories were used to clarify the concepts of this study namely the Kraljic Portfolio Matrix, social capital theory and the seven sourcing practices. The data was obtained via qualitative interviews with 10 purchasers from different companies that were related to local sourcing. During this study purchasers classified different products that were sourced locally into the Kraljic Portfolio Matrix quadrants and argued that each quadrant needs its own local sourcing strategies and local sourcing practices. This had mainly to do with the supply risk and profit impact dimensions of the Kraljic Portfolio Matrix. Companies had different opinions about the seven sourcing practices. But in general each Kraljic Portfolio Matrix quadrant had particular local sourcing practices that stood out. The social capital theory adds value to this process by providing inspiration to companies to improve their collaboration with local suppliers.

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1 Introduction

1.1 The shift from global to local sourcing

In today's society more and more attention is given to purchasing and supply chain management (Carter & Narasimhan, 2006). The role of supply chain management is especially linked to creating more efficient resources (Schliephake, Stevens, & Clay, 2009). To create this efficiency the trend of companies was to source globally. Global sourcing was seen as the best sourcing strategy for companies at the time (Trent & Monczka, 2003). Global sourcing had different benefits such as increasing market share, marketing performance, customer satisfaction and even creating more brand loyalty (Kotabe & Murray, 2018) (Trent & Monczka, 2005). These benefits help companies to reduce their costs and increase their revenues resulting in more profit. For several decades, global sourcing was seen as the next big thing for gaining competitive advantage (Trent & Monczka, 2003). But after a while some limitations became prevalent for global sourcing such as higher transport costs, maintenance costs and quality costs (Steinle & Schiele, 2008). When the first limitations of global sourcing were discovered, other literature built upon these limitations by doing even more risk and cost assessments. With the consequence that the hype around global sourcing was reduced. These risk and cost assessments came to the conclusion that in some cases global sourcing wasn't that valuable for companies. The causes for this were unforeseen hidden and dynamic costs which were not accounted for in the initial calculations (Holweg, Reichhart, & Hong, 2011). The main limitations of global sourcing were related to lack of innovation with suppliers, risks of late delivery and increase of juridical costs (Handley & Benton, 2013). But there was also another phenomenon why the importance of global sourcing began to lag. This phenomenon was the increasing importance of sustainability for companies (Kusi-Sarpong, Gupta, & Sarkis, 2019).

Due to the hype of low costs and efficiency, lots of companies made the decision to base their processes and services overseas which is called offshoring. After a while it became clear that offshoring had a negative impact on the environmental friendliness of companies due to the long distances that have to be covered (Holweg et al., 2011) (Handley & Benton, 2013). Therefore companies made the decision to re-shore which is bringing the production back home (Ashby, 2016). The new trend of reshoring made it possible for companies to source their products and services locally. Local sourcing means the process of obtaining products and services from local sources. And it goes even further than reshoring by having benefits such as production flexibility, cost efficiency, delivery performance and competence development (Tunisini, Bocconcelli, & Pagano, 2011). All these benefits of local sourcing contribute to the increasing importance of products (Bloch & Richins, 1983). Each product needs a different strategy to be successful, this could be local sourcing or global sourcing (Faes & Matthyssens, 2009). Global sourcing is a wider and more researched topic within the literature (Holweg et al., 2011). For local sourcing the opposite is true, literature has barely been touched upon (Schiele, Visser, & Bohnenkamp, 2019). With the focal issue that decision makers lack the knowledge to achieve successful local sourcing practices. After the article of Schiele et al (2019) a few other articles have been published, which form a basic structure for local sourcing. The only downside is that these articles focused on different industries than the manufacturing industry. Industries that were popular among the local sourcing literature were the supermarkets and public sector (Vorley, Fearne, Pitts, & Farmer, 2007). There is still plenty of research needed for companies to be effective with local sourcing, especially in the manufacturing industry. This study helps companies to access more information about local sourcing. Afterall companies have to reconsider the balance between global sourcing and local sourcing, in order to optimize the added value to their business activities (Esteves & Barclay, 2011).

1.2 Relevance of the focal issue

The focus of this study is on local sourcing in and near the Twente region, located in the Netherlands. In the 19th century, the Twente region was well known for its textile industry. But due to the shift of global sourcing to low wage countries, the textile industry moved to Asia (Navaretti, Falzoni, & Turrini, 2001). In 1964 the University of Twente was opened which increased the level of education of the citizens in the Twente region. This had also an effect on the industries that became popular in and near the Twente region, especially the transport industry, metal/electronics industry and construction industry were growing (Bijleveld & Bazen, 2019). These industries contain many production and OEM companies. Furthermore, the presence of the transport and manufacturing industry facilitates a shift to local sourcing practices if the companies desire to do so. Such a shift to local sourcing would also strengthen the triple helix in and near the region Twente, meaning the closely interwoven co-operation between government, universities and industry (Bijleveld & Bazen, 2019).

Another focus of this study is on production companies, especially on OEM companies. Reasons to choose for production companies are that they attach great value to their supply chain (Kherbach & Mocan, 2016) and that local sourcing can be the solution for production companies to deal with the growing importance of sustainability and stricter regulations set by the government (Vimal & Vinodh, 2013). For production companies it is beneficial to source their products locally. To define the scope of local sourcing, a radius of approximately 200 kilometers from the production company is used.

For every production company products play an important role (Baptista, 2014). A key role of products is that they can help you to build a competitive advantage for a company (Friar, 1995). Building a competitive advantage can be done in different ways. For example by introducing new product innovations or by adding different sourcing strategies to products (Faes & Matthyssens, 2009). For this study the latter is chosen, which states that different product categories need matching sourcing strategies to be successful (Burlakova, Karkh, & Ruzhanskaya, 2019). There are different types of sourcing strategies. Some focus more on the relation with suppliers, like multiple sourcing, single sourcing, dual/ hybrid sourcing and network sourcing (Zeng, 2000). Other types of sourcing strategies are more about the geographical distance and these are local sourcing and global sourcing (Yeniyurt, Henke, & Cavusgil, 2013). The focus of this study is on the type of products that are sourced locally, and the practices of how these products are sourced locally.

The practices of local sourcing can be defined as activities with the purpose of finding suitable local products and suppliers for your company on the market (Safizadeh, Field, & Ritzman, 2008). Sourcing practices help companies to collaborate with their suppliers, like they are part of a single enterprise. This collaboration can increase the firm performance and add mutual benefits to both the supplier and the buyer (Lambert, 2000). Companies can adopt different sourcing practices to add value to their supplier collaboration. These sourcing practices are information sharing (Manthou, Vlachopoulou, & Folinas, 2004), goal congruence (Angeles & Nath, 2001b), decision synchronization (Stank, Keller, & Daugherty, 2001), incentive alignment (T. Simatupang & R. Sridharan, 2005), resources sharing (Sheu, Rebecca Yen, & Chae, 2006), collaborative

communication (Mohr & Nevin, 1990), and joint knowledge creation (Johnson & Sohi, 2003). These seven sourcing practices add value to a company by improving innovation, reducing costs and reducing response time (Cao & Zhang, 2011).

1.3 Research questions

What is found in the previous sections is that the focus for this study is on local sourcing for production companies, in and near the region Twente. By taking into account the importance of products, the following research question arises:

RQ 1: What products are sourced locally by production companies?

The first question RQ 1 is added, to find out which products are interesting for companies to source locally. With the help of a set of interview questions it is possible to divide these products into certain categories. This helps to get a good overview of all the products that can contribute to the later stages of this study. The second and last research question (RQ 2) focuses on the practices of local sourcing. The seven sourcing practices are analyzed to see which sourcing practices are most important for production companies (Cao & Zhang, 2011). This helps to find important local sourcing practices which have an influence on the sourcing process. To get a good understanding of this topic, the following research question arise:

RQ 2: What are the practices to source these products locally?

For this study to be valuable, it is important that the research questions are academically relevant. A reason for this study to be valuable, is that there is still no research done in the field of local sourcing in and near the region Twente and – as mentioned earlier – the region Twente has specific characteristics in relation to local sourcing in the transport and manufacturing industry (Bijleveld & Bazen, 2019). Therefore, this research about local sourcing in and near the region Twente is of great relevance. The next section is about the literature review, in which different theories are mentioned and explained in relation to this study.

2 Literature review

2.1 Dividing products into quadrants according to the Kraljic portfolio matrix

To be able to answer the research questions, it is helpful to clarify the concepts of this study with theory. There are different theories used to place products into portfolios. But for this research, the Kraljic Portfolio Matrix (KPM) was chosen, which focuses on purchasing (Kraljic, 1983). For purchasing it is important to use a variety of sourcing strategies for different product categories. Since every product category has different characteristics, and therefore need to be taken care of in different ways (Kraljic, 1983). In this study a wide variety of locally sourced products is researched, which all have different characteristics. The KPM can help by categorizing these different locally sourced products into four quadrants. This will contribute to finding the best possible sourcing strategies and practices for each product type. Examples of different product characteristics are specificity which refers to the amount of substitutes for a particular product. Another product characteristic can be the delivery frequency of a product, which refers to the amount of delivery options of a particular product. Also the level of uncertainty can be a product characteristic, which is the chance that an ordered product will not be delivered successfully and in time (Buvik & Reve, 2001). All these product characteristics impact the level of supply risk for companies.

Next to the supply risk of products, there is another feature of products that is important to companies. And this is the amount of profit that is yielded per product (Montgomery, Ogden, & Boehmke, 2018). There are three attributes of profit impact. The first one is impact on profitability, which can be described as the amount of profit that is accumulated per product. The second attribute is the importance of the purchase, which comes down to the urgency and importance to buy a certain product. The last attribute is the value/cost of the purchase, this can also be seen as the total costs per product or value that is derived from the purchased product (Padhi, Wagner, & Aggarwal, 2012).

These two dimensions of supply risk and profit impact form the basis of the Kraljic Portfolio Matrix (KPM). The goal of the KPM is to minimize the supply weaknesses and optimize the buying power. This was done by putting purchase products into four portfolio quadrants related to two dimensions; supply risk and the profit impact for the firm (Kraljic, 1983). The KPM helps companies to define sourcing strategies for different products. The KPM is a 2x2 matrix which has in total four quadrants. Each quadrant in the matrix needs its own knowledge and skills to function well (Knight, Tu, & Preston, 2014). The four quadrants are non-critical, bottleneck, leverage and strategic products as illustrated below in Fig. 1. (Padhi et al., 2012). Non-critical products are normally low in value per product. And there are many alternative suppliers for these products. The second quadrant is the bottleneck products, and these receive more attention from purchasers. Since bottleneck products are often average in value. But the supply risk is high, which means that there are less alternative suppliers for bottleneck products. Suppliers have the power to put pressure on companies, since they have almost no competitors (Kempeners, 1997). The third quadrant are the leverage products, which are characterized by lots of alternative suppliers. In contrast to bottleneck products, leverage products represent valuable products which form a large share of the total cost price. Therefore companies should place emphasis on cost reduction, since a small percentage of cost reduction represents a large amount of money (Olsen & Ellram, 1997). The last quadrant are the strategic products, which have a large impact on the profit and have high supply risk. There are often only a couple of suppliers who can supply the right products. Therefore companies should place great emphasis on the relationship with the supplier (Caniëls & Gelderman, 2005). To improve the relationship with suppliers another theory is valuable, and this is the social capital theory.

Figure. 1. Kraljic Portfolio Matrix

2.2 Improving the collaboration between suppliers via social capital theory

Social capital theory was first defined by Bourdieu in 1985. In his theory he mentioned that capital is not purely economic, but that capital can also be seen as social capital. He defined social capital as the sum of resources that companies can accumulate by having a durable network or relationship of mutual knowledge and recognition (Bourdieu, 1986). After the work of Bourdieu,

Nahapiet and Ghoshal researched the social capital theory from a management perspective in their article 'social capital, intellectual capital and the organizational advantage'. They defined three dimensions of social capital, the structural, relational and cognitive dimension. The structural dimension is about (impersonal) properties of the network, the relational dimension is about the kind of personal relationships and the cognitive dimension is about the resources providing shared interpretations (Nahapiet & Ghoshal, 1998).

The Kraljic portfolio purchasing matrix focused on mapping different products in each quadrant. The social capital theory adds another perspective, namely building relationships among different companies. The social capital theory adds value in this process by playing an important role for exchanging resources between the buyer and supplier (Hughes & Perrons, 2011). The definition of the social capital is the sum of resources that is gathered by firms due to long lasting inter-firm relationships (Nahapiet & Ghoshal, 1998). Social capital can provide different benefits to companies such as, increasing the efficiency of different actions of companies. And increasing the efficiency of the information flow between companies, by eliminating most of the risks (Burt, 2000). Another benefit of social capital is that there is less need for monitoring processes, because companies trust each other. With the result that the transaction costs are reduced (Putman, 1993). These benefits can contribute to improving the relationships that companies built with local suppliers. It will help companies to add value for their companies since they achieve better supplier integration without using too much money (Horn, Scheffler, & Schiele, 2014). Supplier integration is important for companies since it increases the flexibility of companies (Chen, Liu, Wei, & Gu, 2018).

2.3 The seven sourcing practices

The seven local sourcing practices are focused on the collaboration between two or more supply chain partners, to work towards the same goals (Mentzer et al, 2001). In this study the relation between the seven local sourcing practices and the four quadrants of the Kraljic Portfolio Matrix is researched. The goal is to find for each quadrant of the KPM the most important sourcing practices. These sourcing practices add value to this study by enhancing the firm performance and simplify the access to resources for companies (Cao & Zhang, 2011). This will help companies to optimize their process of sourcing local products.

The first sourcing practice is information sharing which refers to the amount of relevant, complete and accurate information that is shared from the buyer to the suppliers (Cagliano, Caniato, & Spina, 2003). Examples of information sharing are shared strategic and tactical data as well as shared inventory levels and forecasts. The second sourcing practice is goal congruence which is the degree of goal agreement among supply chain partners (Angeles & Nath, 2001a). Goal congruence is achieved when both supply chain partners work towards the same company objectives, or when both supply chain partners work towards the overall supply chain objectives (Lejeune & Yakova, 2005). The third sourcing practice is decision synchronization which is about coordinating the decisions in the supply chain operations and planning to achieve the best possible supply chain outcomes (Simatupang & Sridharan, 2002). There are seven common examples of decision synchronization and these are: demand management, operations strategy planning, production planning and scheduling, promise delivery, procurement, balancing change and distribution management (Lockamy & McCormack, 2004). The fourth sourcing practice is incentive alignment which comes down to sharing risks, benefits and costs between all the supply chain partners (T. M. Simatupang & R. Sridharan, 2005). The goal of incentive alignment is that each supply chain partner benefits from the outcomes of the collaboration. This is done via determining risks, benefits and costs as well as making good incentive schemes (Manthou et al., 2004). The fifth sourcing practice is resource sharing which comes down to the bundling of resources, capabilities and assets among supply chain partners. Also mutual investing plays a part in resource sharing in for example machinery or facilities (Harland, Zheng, Johnsen, & Lamming, 2004). The sixth sourcing practice is collaborative communication which refers to the frequency in which suppliers have contact with each other. It is about a two-way communication, which is balanced between the supply chain partners (Goffin, Lemke, & Szwejczewski, 2006). The last sourcing practice is joint knowledge creation and here it is about the extent to which both supply chain partners develop an understanding of the market by working together (Malhotra, Gosain, & Sawy, 2005). This can be done in two ways the first one is knowledge exploitation which is using the current knowledge. And the second way is knowledge exploration which is gathering the necessary knowledge to understand the market (Bhatt & Grover, 2005).

3 Methodology

3.1 Research strategy

The main focus of this study is to find out how production companies apply local sourcing practices for their products. The research philosophy that is used is critical realism, because the focus is on explaining what people see and experience when doing certain events (Saunders, Lewis, Thornhill, & Bristow, 2019). These events shape the reality in which we live (O'Mahoney, 2016). In this study the reality that is investigated are the choices made by practitioners about sourcing practices. These sourcing practices shape the processes which are utilized by production companies. The second part in this research strategy draws upon theory testing and theory building. These two approaches were indicated as deductive and inductive reasoning. Later a third approach was added which is abductive reasoning. Abductive reasoning is a mix between deductive and inductive reasoning and was most related to this study (Suddaby, 2006). Because in this study there are different parts where theory is tested and theory is built. For example by the KPM framework where the existing theory is tested and new aspects of the KPM framework are investigated. To be able to gather the data, it is necessary to have a research strategy. There are a variety of research strategies, but the one that is most applicable to this study are case studies (Saunders et al., 2019). Normally case studies follow a multi-method approach, but for this study a mono-method is chosen, which is based on qualitative data. This is further explained in the paragraph on data collection.

3.2 Population and sample

The data for this study is gathered from production companies in and near the region Twente. All the production companies in and near the Twente region are useful for this study, and therefore form the population. There are a couple of hundred production companies in and near the region Twente (Bijleveld & Bazen, 2019). The sample size that is chosen, is a total of 10 production companies in and near the region Twente (see Appendix A). Within these 10 production companies the half was interviewed by Lars and the other half by Gerald. These 10 production companies are selected based on purposeful sampling, which is selecting and identifying different cases based on particular interests (Palinkas et al., 2013). This study uses the typical case approach. This approach aims to select average cases instead of outliers. So extreme big or small production companies are not selected. Also companies that produce very special products don't fit. So for all selected companies there are competitors

making similar products. Furthermore, different industries were selected among the sample to increase the reliability of this study (Taherdoost, 2016). Some of these industries were the construction, electric and metalworking industries. These industries are also common in and near the Twente region (Bijleveld & Bazen, 2019). The production companies that were contacted by Lars were contacted via e-mail or telephone. In total 6 production companies were contacted, 5 companies reacted in time and were interviewed. The sixth production company reacted after 2 weeks and was therefore excluded from the interview. Every interview was recorded, which was accepted as mentioned in the consent. Four out of the five interviews were conducted in person. And one interview was conducted via Teams, due to the Covid-19 circumstances.

3.3 Data collection

The chosen method to collect this qualitative data is interviews. The goal of an interview is to gather information about the participants experiences, motives and opinions concerning the topic that is chosen by the interviewer (Lambert & Loiselle, 2008). There are different advantages to choosing interviews. Some of them are that it is feasible to integrate multiple perspectives into your interview, which helps to develop a good understanding of the topic. Another advantage is that you can ask follow up questions to get an understanding of the reasoning behind arguments (Watts & Ebbutt, 1987). There are three types of interviews: structured, semi-structured and unstructured interviews. The type of interview structure that suits this study the best are semi-structured interviews. This type of interview consists of several key questions that make sure that the most important topics are asked within the interview. But there is still room for follow up questions which can improve the quality of the data. It is also possible to add theories to your questions which are important for this study (Gill, Stewart, Treasure, & Chadwick, 2008). Another qualitative data collection method is focus groups, here a research topic is being discussed within a group. The drawback here is that this method sometimes discusses information which purchasers do not want to share (Morgan, 1998). Therefore the preference in this study is on individual interviews.

Eventually the interviews were conducted individually on a semi-structured basis laid down in an interview protocol (see Appendix B). The interview protocol allows for control in the interview, while still having the possibility for the interviewee to place emphasis on the parts that he or she finds important. The interview consisted of seven parts. The first part began with an introduction and some easy questions to make the interviewee feel comfortable. The second part introduced the local sourcing aspect to introduce the topic of this study. After that part three focused on categorizing products into the KPM quadrants. After which part four and five included questions about respectively motivations and challenges that companies experienced with local sourcing. The sixth part covered the seven sourcing practices and their relation to the KPM framework. It was decided to explain all the definitions of the seven sourcing practices to the interviewees. To make sure that they understand each of the seven sourcing practices well. The last and seventh part was the closure which asked the interviewees if they want to add something to the interview before the interview was finished.

3.4 Data analysis

All the ten interviews were transcribed manually, because programs such as Amberscript weren't accurate in their translations. This ensured that the quality of the transcriptions were as accurate as possible. The next step was to read all the transcripts. Via open, axial and selective coding the first version of the codebook was made (Kendall, 1999). To check the completeness of the codebook, the codebook was tested several times in the program Atlas.ti. This was done to add new categories and codes that were still missing. During the last run of the codebook, it became clear that the data was saturated which indicates that the codebook was complete (see Appendix C). With the program Atlas.ti it was possible to compare and select different codes. This made it easier to see how different codes relate to each other. Another feature of Atlas.ti is that it is possible to see the frequencies of different codes. Which also indicates the importance of each code.

3.5 Validity and Reliability

To increase the validity of this study a couple of things were done. The first one is doing pilot interviews to increase the quality of the interviews (Abdul Majid, Othman, Mohamad, Lim, & Yusof, 2017). The second thing that was done was that all interviews were conducted in Dutch. This was done to ensure that the interviewee understood all the questions correctly. If there was any doubt that the interviewee didn't understand the question, additional explanation was always given to the question. To increase the reliability the choice was made to interview 10 companies instead of five companies. This was possible since Gerald and Lars both conducted five interviews. Furthermore, the codebook and the coding were done by two persons, Lars and Gerald. This reduced the chance of mistakes. The last action taken was that the transcripts were sent to each interviewed company to make sure that everything was correctly transcribed.

4 Empirical Findings

4.1 A case description of the interviewed companies

In total 10 interviews were conducted with professional purchasers from different industries. The names of the companies are not stated due to confidentiality reasons. Therefore the choice was made to give each individual company a letter from A to J (see Appendix A). In table 1 all relevant aspects of the companies are mentioned like the type of industry, type of products sold, percentage of locally sourced products, company size and the country where the company is located. Among the 10 interviewed companies there are eight different industries. The most represented industry is the metalworking industry and includes companies A, B and H. The other seven industries are construction, electronics, furnishing, agriculture, oil & gas, plastic and packaging. This shows that the data comes from a wide variety of industries. The column with the percentage of local sourced products indicates how much of the total purchased products are bought locally. Some companies sourced 20% of their products locally whereas other companies sourced 90% or more of their products locally. Another distinction between the companies was made on company size. Where small companies had less than 50 employees, medium companies had 50 to 200 employees and large companies had 200 or more employees. In total four companies were small in size and six companies were medium in size.

4.2 Products in the Kraljic portfolio matrix quadrants

The KPM framework is helpful to place certain products into four quadrants. There are two dimensions in the KPM framework which differentiate the four product quadrants. These two dimensions are supply risk and profit impact which range from high to low. During the interview the purchasers were asked to categorize products for each KPM quadrant. When this was done

the follow up questions were if they bought the products locally or globally and what their reasons were to buy the products locally or globally.

The first result of the analysis was that three out of the four product quadrants were mostly bought locally by the interviewed companies. However for the bottleneck quadrant this was not the case. Here several reasons were given why certain products were chosen to be sourced globally such as price reasons. “No, for bottleneck products I don’t have local suppliers. This is really because of the price. The suppliers we work with now simply offer the best price” (Company F, p. 2). Other reasons were the lack of quality by local suppliers. “This has mainly to do with the quality. These bearings come from Japan, which is an important bottleneck for us. The price/quality ratio is premium with suppliers from Japan. The quality reasons play the biggest role here, because in Europe the comparable production has disappeared” (Company A, p. 2). There were still some exceptions where companies tried to source bottleneck products locally “You prefer to buy your bottleneck products locally, because then you have the least possible supply risk. There are all kinds of risks that you encounter along the way that affect your supply risk” (Company G, p. 2).

As mentioned before the other three quadrants were often sourced locally, different reasons were given per quadrant. For the routine quadrant the general reason was that it was the easiest option to buy products locally. Since the products were low in supply risk and low in the impact on profit. One company said “Those routine products like staff clothing or simple batteries. We buy all these locally, which is the easiest and quickest way for us” (Company C, p. 2). The reasons for leverage products to be sourced locally were different. They were also relatively easy to buy locally, but they are high in value for the company. Some reasons given are “The bottom casing of our product is just a container with a lot of technology in it. We buy this locally, it does not have a high supply risk but it does represent a high value” (Company G, p. 2). For the last quadrant which are strategic products the reasons to source locally related more towards the importance of the products. And also eliminating the challenges of global sourcing since the importance of strategic products is high. One company said “We buy strategic products locally due to shortages of deliveries from far away. Also, late deliveries were not advantageous for these products when we bought them globally” (Company B, p. 2). Another reason that was given to source strategic products locally was “Because suppliers are close by, you can switch faster. That is simply an advantage. For strategic products in particular, it is an advantage if the supplier is located nearby” (Company F, p. 3). This reason was often repeated by companies. “If you look at strategic products, you do want to have certainty of delivery and this is more guaranteed by purchasing locally” (Company H, p. 3). Most companies tried to make sure that their strategic products were sourced locally. Because these products are often very important to a company. There were some exceptions were it was not possible to source strategic products locally. For example: “For our strategic products, we do not have very many suppliers that we can buy locally from” (Company G, p. 2).

The overall findings suggested that a high impact on the profit was a motivation to source products locally. Since this had benefits such as faster deliveries, more certainty of delivery and it was easier to switch between suppliers. Which is needed to make sure that these high valued products are delivered on time. The second finding was that products which are low in supply risk are often sourced locally due to the high amount of possibilities to source these products locally. In contrast, it was stated that it was more difficult to source products with a high supply risk locally. Reasons given were that the products are simply not available locally or that there is a lack of quality by local suppliers. The underlying reason for this could be that bottleneck products are products that are hard to obtain. This may be because they are complicated products or because they are products that are rarely produced. Yet the high value of products was decisive for strategic products to be sourced locally when possible.

4.3 Sourcing practices

The next part concerns an analysis of the seven sourcing practices which were found in the literature (Cao & Zhang, 2011). A scorecard was used to rate each individual sourcing practice on a scale from 1 to 10. Where 1 indicated a low importance of the sourcing practice and 10 a high importance of the sourcing practice. The importance was related to the weight purchasers gave to a specific sourcing practice to achieve better performance when sourcing locally. The averages per sourcing practice were calculated for the ten interviewed companies and can be found in figure 2 below. All the sourcing practices were asked in relation to local suppliers. See appendix D for each individual score.

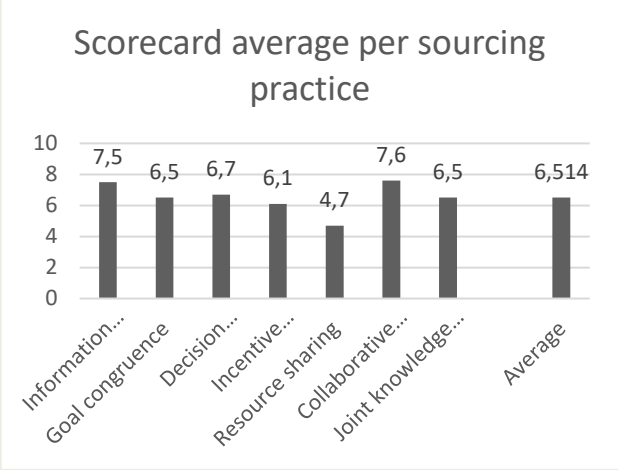

Figure. 2. Scorecard averages per sourcing practice

4.3.1 Lowest cluster: Resource sharing

In this section each sourcing practice will be analyzed separately. The sourcing practice that was rated the lowest on average was resource sharing with a 4.7 on average. Some companies said “It certainly occurs within our company, but not to such an extent that I would say it is of great importance within our company” (Company D, p. 4). Company D gave resource sharing a 5. There were even extreme cases such as Company G who said “Sharing resources is difficult for us, because we are an assembly factory. So it is not very important for us, I rate it a 3” (Company G, p. 3). Yet there were other companies who rated resource sharing as a 7. For example company J who said “Sharing resources, we do that sometimes. I had a supplier who had to make a plastic plate on a stainless steel plate to absorb vibrations. However, his stainless steel supplier was far too expensive, so I arranged for him to buy it from our department across the road” (Company J, p. 4). Still the overall findings showed that both the maximum score and the minimum score were the lowest for resource sharing, see table 1 below. So this corresponds with the lowest average that was given to resource sharing.

Table. 1. Insights sourcing practices

Scores / Sourcing practices	Total score	Average score	Maximum score	Minimum score

Information sharing	75	7,5	10	6
Goal congruence	65	6,5	9	3
Decision synchronization	67	6,7	9	4
Incentive alignment	61	6,1	9	2
Resource sharing	47	4,7	7	2
Collaborative communication	76	7,6	10	5
Joint knowledge creation	65	6,5	9	3

4.3.2 Middle cluster: Incentive alignment, Goal congruence, Joint knowledge creation and Decision synchronization

After resource sharing there was a middle cluster of four sourcing practices and these were incentive alignment (6,1), goal congruence (6,5), joint knowledge creation (6,5) and decision synchronization (6,7). All these averages fell into the 6 to 7 range. In the next part for all these four different sourcing practices citations will be given. The lowest average of the middle cluster was incentive alignment and companies said "Above an X amount, we can often see rewards from both sides. This could be discounts, for example, but also price reductions on subsequent purchases, etc" (Company D, p. 4). Other companies said for goal congruence "One wants to earn as much as possible and the other wants to save as much as possible. But with all the suppliers we have, we actually share the same goal: we want to let each other live" (Company G, p. 3). For joint knowledge creation other companies said "Joint knowledge creation is becoming more and more important. We are going to collaborate with suppliers in all areas of the organization. They are going to gain insight into our sales, so that they can take that into account in their capacity" (Company G, p. 3). Company D argued that joint knowledge creation is valuable with local suppliers "Once we had to improve our central heating boiler we used joint knowledge creation here. We choose to do this only in collaboration with local suppliers. Because this has benefits such as better communication and more flexibility" (Company D, p. 5). For the last sourcing practice in the middle cluster companies said "We try to synchronize our decisions with the representatives of our suppliers and wholesalers we buy from. So once every four weeks, the account manager visits us to see if our decisions are synchronized. We also go through all the decisions then, this is again of strategic importance." (Company D, p. 4). Most companies were moderate in their comments on these four sourcing practices in the middle cluster. There is however a difference in the averages of these sourcing practices. If we look at the maximum of these four sourcing practices they all score a 9. For the minimum scores there are differences among the four sourcing practices. Incentive alignment had the lowest minimum score which was a 2 given by Company I. They said "We try to focus on ourselves, therefore we are not interested in incentive alignment with other companies" (Company I, p. 3). The two sourcing practices who shared an average of 6,5 were goal congruence and joint knowledge creation. They both had a minimum score of 3. Company J gave goal congruence a 3 and they said "Goal congruence, which we only participate with one supplier. Happens for example when a customer wants a discount and we are unable to give it, then we call the strategic supplier to ask whether he can do something with the price. In principle we do that very little" (Company J, p. 3). Joint knowledge creation was given a 3 by company F and they said "The bottom line, joint knowledge creation, is something I don't see much of, with my current employer. That is something we want to look at more in the second half of this year" (Company F, p. 4). The highest rated sourcing practice of the middle cluster was decision synchronization. And this sourcing practice had a 4 as minimum score. Company F who gave the lowest score said "Decision synchronization is not very pronounced either, at the moment I would rate this a four. We are working on getting it to a seven or eight" (Company F, p. 4). According to the maximum scores and minimum scores of the four sourcing practices in the middle cluster, it could be argued that the differences in the minimum scores are decisive for the differences in the total averages of these four sourcing practices. However company F said that they want to become better in joint knowledge creation and decision synchronization, as mentioned in the citations above. This suggests that the importance of joint knowledge creation and decision synchronization may improve in the future.

4.3.3 Highest cluster: Information sharing and Collaborative communication

The last two sourcing practices that got the highest scores are information sharing (7,5) and collaborative communication (7,6). Companies acknowledged the importance of these two sourcing practices in relation to their local suppliers. For information sharing companies said "Sharing information with our suppliers is important, because we often have difficult products but guarantee fast delivery times. For example, some parts have a 24-month delivery time, but we promise our customers a delivery time of 6 months" (Company G, p. 3). Other reasons were "We share our information with our suppliers in a very transparent way. In fact, we often give our suppliers the quantities purchased the year before. So they have an overview, we just lay it out on the table. We are very transparent in this aspect, but that is also why we are able to purchase very competitively" (Company E, p. 4). During the interview every company was positive about information sharing in relation with their local suppliers. The interviewed companies named the benefits of information sharing such as faster delivery times and lower product prices. Companies also mentioned the benefits of local suppliers in relation to information sharing "Because local suppliers have advantages. And these advantages lie mainly in the same language, fast interaction and no time differences" (Company G, p. 1). These benefits are also reflected in the findings as the maximum score for information sharing is a 10 and the minimum score is a 6. The last and highest rated sourcing practice is collaborative communication with a 7.6. Companies were mostly positive and said "Collaborative communication happens certainly once or twice a week. Keeping in touch with the relevant suppliers, who are very important to us, talking about the current state of affairs and the frequency of the work" (Company D, p. 4). Other companies named the importance of collaborative communication to stay competitive "Collaborative communication happens when there is certain tightness in the

market for certain parts, open communication is very important. Because probably our supplier has the same problem, because in our industry everyone is fishing in the same pond. So if we don't use our collaborative communication in that situation, we will lose our competitive position in a new situation" (Company B, p. 3). Other companies argued that collaborative communication is the best with local suppliers "Not everyone masters the English or German language, which makes it difficult to put things into words. Companies do business, but contacts make the business" (Company H, p. 2). The lowest score that was given to collaborative communication was a 5 by company C. The highest score was a 10 which was given by company D & H.

To sum up, regarding the seven sourcing practices. There was one sourcing practice that companies generally considered the least important and this was resource sharing (4.7). After that there was a middle cluster with four sourcing practices namely incentive alignment (6,1), goal congruence (6,5), joint knowledge creation (6,5) and decision synchronization (6,7). Companies were mostly average in their expressions about these four sourcing practices. However companies saw the growing potential and importance in joint knowledge creation and decision synchronization. This suggested that in the future the importance of these two sourcing practices may improve. Which was confirmed by the citations of company F. The last two sourcing practices who were given the highest averages were information sharing (7,5) and collaborative communication (7,6). There is still a chance that in the future joint knowledge creation and decision synchronization are going to be of the same importance to companies, when working on their relation with local suppliers.

4.4 Sourcing practices linked towards the Kraljic Portfolio Matrix quadrants

4.4.1 Routine quadrant

The next part will investigate how the seven sourcing practices relate to the four KPM quadrants. During the interview the ten companies were asked how they look towards the seven sourcing practices in relation to the four KPM quadrants. This resulted in the findings which can be seen in figure 3 below. The routine quadrant which is low in the impact on profit and low in supply risk was often related to information sharing. Companies said "Yes, this is actually only information sharing for us. Since we buy these products very easily at local suppliers" (Company C, p. 4). A common answer was that information sharing is the only important sourcing practice in the routine quadrant. Since routine products are easily accessible for companies. Yet company E had a different insight for the routine quadrant.

> "I would probably say collaborative communication, or no, perhaps joint knowledge creation. I would say that because we mainly used that in the beginning because it was a routine product. Once the purchasing process went well and was standardized, it was really just ordering because this was not a product that had a big impact on our business anyway. In fact, for us it is now often just a matter of buying, and there is no need for a meeting or anything like that. Now it is more information sharing, but only to a small extent" (Company E, p. 5).

Company E mentioned that in the beginning routine products require collaborative communication and joint knowledge creation. But once the sourcing process is standardized, information sharing takes the overhand.

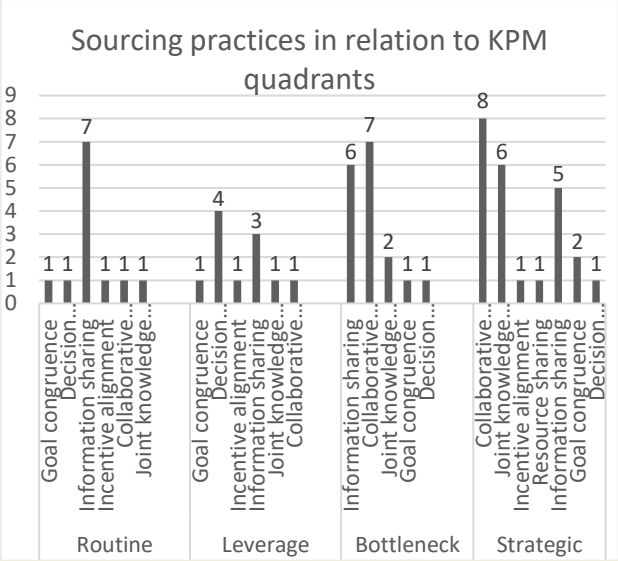

Figure. 3. Sourcing practices in relation to KPM quadrants

4.4.2 Leverage quadrant

The second quadrant are the leverage products. This quadrant is high in the impact on profit and low in supply risk. Company G said "Talking about the upper quadrants of the matrix. You want to run as little risk as possible with these products. The supplier also has a lot of work to do, he has to reserve a lot of capacity in order to make something happen. You then both want to communicate a lot in order to avoid being wrong" (Company G, p. 4). There were also other sourcing practices which companies used in relation to their leverage products. One company mentioned decision synchronization and said "The synchronization of decisions is very important to us for leverage products. We have actually optimized this within our company. That makes a big difference for us because we also stock these products. Therefore, it is important that everything is automated because it has a great impact on our profits" (Company E, p. 6). Another company said "We ended up working together as installation companies to create a better leverage product. We came to the conclusion that certain components had to be replaced in the whole category of boilers. Now, with the new type, all of this has already been dealt with in the preliminary phase by applying joint knowledge creation" (Company D, p. 5). As mentioned before in part 4.3, companies preferred to use joint knowledge creation in collaboration with local suppliers. To achieve better results due to better communication and more flexibility. To sum up the leverage quadrant had not one sourcing practice that stood out. There were more sourcing practices important for the leverage quadrant as mentioned by the citations.

4.4.3 Bottleneck quadrant

The next quadrant are the bottleneck products. For this quadrant there were two sourcing practices that stood out. The first one was information sharing. And one company said "We talk mainly about sharing information. So we have been awarded the project and then we immediately talk about some purchasing that takes place. These are, for example, the hard to get products that are immediately included in the pre-project. So it is information from our side in which we indicate how many products we want and when we want them" (Company D, p. 5). This was mainly about making sure that the right information was gathered for the bottleneck products. The other important sourcing practice in the bottleneck quadrant was collaborative communication. And companies said "This is collaborative communication. Because

we need to have information from our suppliers, to be able to buy at the right time. This is very important because we cannot make our purchases very often. So we need to make sure that the collaborative communication is done in a proper way" (Company B, p. 4). Here it was more about making sure that the communication was done in a proper way. This would reduce the chance of mistakes by bottleneck products. There were other companies who had a different opinion and they said "By bottleneck products we have two problems and that is that we have many suppliers, but also more difficult suppliers. Therefore it is hard to link only one sourcing practice to this quadrant. So I would link decision synchronization, information sharing and collaborative communication to this quadrant to make sure that the process runs smoothly with all these suppliers" (Company E, p. 6). The overall finding was that there were two sourcing practices that stood out and these were information sharing and collaborative communication. Yet there were exceptions where companies argued to use more sourcing practices. To make sure that the sourcing process with suppliers went smoothly.

4.4.4 Strategic quadrant

For strategic products two sourcing practices stood out. The first one is collaborative communication. And companies said "On the right-hand side of the matrix, where the supply risk is the highest. This is where the difficult products are. You can have an expensive product that affects the profit, but does it affect it that much? That's just high financing but it is easy to get. The latter takes much more time, work and collaborative communication" (Company G, p. 4). Company G mentioned the importance of collaborative communication in order to successfully source the difficult products. The second sourcing practice that stood out in the strategic quadrant was joint knowledge creation. Companies gave different arguments here "Because I am a chemical technologist myself and the composition of plastics is largely done with the help of our supplier. There is a crucial factor that we have to work together to constantly innovate our composition of plastics. Strategic products are more about the joint creation of knowledge, otherwise they would not be strategic in my eyes" (Company A, p. 4). Arguments given about joint knowledge creation were about innovating your strategic products. Companies said that this was necessary, since strategic products are often the most valuable products.

There was another finding in the strategic quadrant which partially overlapped with the bottleneck quadrant. There were more companies who had a shared opinion about the supply risk of products. Companies noticed that.

> "If you draw a sloping line from bottom left to top right, the further up you go, the more these practices apply. For my stickers, for which I pay a total of €13,000 a year, I don't care if the supplier says he can do it 10% cheaper. For routine products, you only look at it a couple of times per year. So the further you get to the top right of the matrix, the more those practices apply" (Company J, p. 4).

> "What I mainly noticed is that we need more practices for bottleneck products and strategic products. This is because there is often a higher risk of delivery. This requires us, as a company, to respond to this by working more on the relationship with our suppliers. For routine products, in contrast, this is a lot easier and there are far fewer practices involved" (Company E, p. 6).

To sum this all up, a couple of companies argued that the supply risk dimension had an impact on the need for different sourcing practices. Companies indicated this during the interviews, see the citations. But it is also noticeable in the amount of sourcing practices that were coded per quadrant. The routine quadrant had in total 12 sourcing practices coded, the leverage quadrant had 11 sourcing practices coded, the bottleneck quadrant had 17 sourcing practices coded and the strategic quadrant had 24 sourcing practices coded see figure 3. This also showed that quadrants with a high supply risk had more sourcing practices coded. Which is plausible because products that are hard to get need more attention.

4.5 The buyer – supplier relationship

The last part in this analysis is about the buyer – supplier relationship. And companies were asked during the interview how they tried to improve their relationship with local suppliers. Companies came up with different tools that were used to improve the buyer – supplier relationship. In total six tools were identified by the companies themselves (See figure 4 below). It was possible that the frequencies of these tools are higher than the number of interviewed companies (10). Since for every time a tool was mentioned in a different context, the tool was coded. When looking at the findings there was one outlier among the six tools. And this was sharing product information which was coded 2 times. However company D saw the importance in sharing product information.

> "The mechanic comes back with a certain amount of feedback about the product. I then summarize and check this feedback, and try to see if the feedback is also accurate with what we see. Ultimately, we share that with the supplier, and eventually the supplier also involves the manufacturer in order to complete the circle" (Company D, p. 5).

For the other five tools it is noticeable that the ranges within the different categories don't vary a lot. The most mentioned tool was meetings with suppliers and this tool was coded 12 times in total. Companies D (p. 3), E (p. 3), G (p. 3), H (p. 2) and I (p. 4) stated to use this tool often, to improve their buyer – supplier relationship. They said for example: "Every year, we invite suppliers and they come and visit us. And then we look together with them at what is going well and where we can still improve" This tool is especially useful in relation with local suppliers. Due to different reasons companies have to travel less, companies are in the same time zone and companies can talk their own language. (Company E, p. 3).

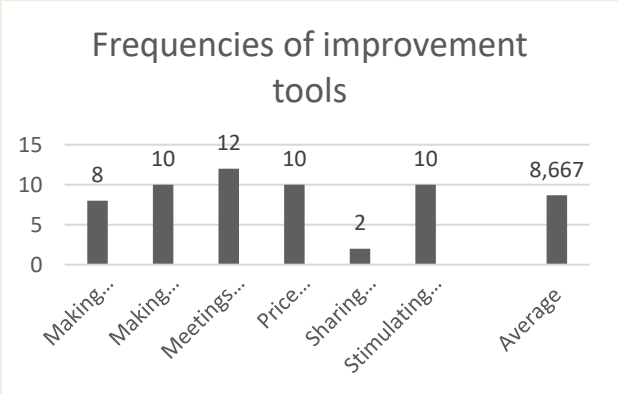

Figure. 4. Scorecard average per improvement tool

5 Discussion

Most of the findings in this study overlap with the existing literature. The first main finding was that three out of the four product quadrants are often sourced locally. And that the bottleneck quadrant was mostly sourced globally. This is logical in that sense that if products are sourced locally it comes together

with easy communication, fast and flexible delivery times and good relationships with these local suppliers and therefore the supply risk is low. This makes that routine and leverage products are characterized by low supply risk. Yet global sourcing is generally seen as a sourcing method to reduce the overall costs (Kotabe & Murray, 2018). Therefore it would have been logical if companies choose to source their leverage products globally. Since these products have a high impact on the profit for companies (Olsen & Ellram, 1997). In this study interviewees were asked to categorize different leverage products. It was noticeable that almost every leverage product that was mentioned by the interviewees was sourced locally. This was mainly due to the fact that companies want to achieve all the local sourcing benefits. Such as increased flexibility, shorter lines of communication and more purchase certainty. This could mean that companies attach more value to the benefits of local sourcing than to cost reductions. Or to the fact that low wage countries are not that valuable for companies anymore. The last quadrant that was often sourced locally were the strategic products. These were high in supply risk and high in the impact on profit. The remarkable thing here was that these products were mostly sourced locally while the supply risk was high. A high supply risk is mostly related to a low amount of available suppliers (Kraljic, 1983). Yet almost all companies had managed to source their strategic products locally. This was mainly because all companies wanted to minimize their sourcing uncertainties. Because strategic products have a high impact on the profit. The only quadrant that was often sourced globally were the bottleneck products. And this was mainly because there weren't local suppliers available or there was a lack of quality by local suppliers. Nevertheless, companies could choose to collaborate with other companies in order to make it profitable for local suppliers to produce the needed bottleneck products (Burt, 2000).

The second main finding was about the seven sourcing practices (Cao & Zhang, 2011). Companies rated the seven sourcing practices according to their importance in relation to their local suppliers. The results from the interviewed companies suggested that there were three clusters among the sourcing practices. In contrast, the literature distinguished these seven sourcing practices in two clusters. The first cluster was focused on the supply chain collaboration and included information sharing, goal congruence, decision synchronization, resource sharing and incentive alignment (Golicic, Foggin, & Mentzer, 2003). The second cluster that was distinguished by the literature focused on communication and included collaborative communication and joint knowledge creation (Mohr & Nevin, 1990) (Johnson & Sohi, 2003). The findings in the empirical research weren't the same as what was found previously in the literature. Since the empirical findings suggested that there were three clusters and the literature argued that there are two clusters. However, some of the results in the empirical findings are partly in line with the literature. The first cluster in the literature that focused on communication included collaborative communication and joint knowledge creation. As mentioned in the empirical findings collaborative communication was already in the highest cluster. While joint knowledge creation may join this highest cluster in the future. Because the interviewed companies argued that they want to become better in joint knowledge creation. The other sourcing practice that is already in the highest cluster is information sharing. The remarkable thing here is that other researchers argue that information sharing could help with improving communication (Min et al., 2005). This would mean that companies attach more value to sourcing practices that focus on communication. Instead of sourcing practices that focus on supply chain collaboration. Another view may be that companies who source locally attach more value to sourcing practices that focus on communication. Since it is easier for local companies to communicate in the same language, same time zone and same corporate culture, it could be possible that companies who source globally attach more value to the sourcing practices that focus on supply chain collaboration. For companies who source globally, communicating is harder because of the different languages, different time zones and different corporate cultures. But that wasn't researched within this study.

The last main finding related to the seven sourcing practices and the Kraljic Portfolio Matrix quadrants. The first thing that stood out was the fact that the quadrants which were high in supply risk made the most use of the sourcing practices. This is largely in line with the existing findings in the literature. Articles argued that companies who buy strategic and bottleneck products should focus on improving their relationships with their suppliers. They should form partnerships with their strategic suppliers and collaborate with their bottleneck suppliers (Caniëls & Gelderman, 2005). To make sure the relationships are good, companies could get inspiration from the social capital theory. The social capital theory adds value in this process by playing an important role for exchanging resources between the buyer and supplier (Hughes & Perrons, 2011). Which is especially useful for the strategic and bottleneck quadrant, since here the supply risk is high.

There was another finding which did not correspond with the existing literature. This had to do with the leverage quadrant. Companies argued that they made the least use of the sourcing practices in relation to their local suppliers for leverage products. This was not expected in advance, because the existing literature argues that the leverage quadrant is of greater importance to companies than the routine quadrant. Since the leverage quadrant is high in the impact on the profit and the routine quadrant is low in the impact on profit for the firm (Kraljic, 1983). The leverage products often represent a large share of the cost price. And a small percentage of cost savings is usually involved with a large share of money (Olsen & Ellram, 1997). Therefore, it was logical if companies made great use of sourcing practices to buy leverage products. But this was not confirmed from the data that the ten interviewed companies provided. An underlying thought among the ten interviewed companies could be that they focused on relationships instead of the value of products. The ten interviewed companies had in general a preference towards local suppliers for sourcing routine products.. The advantage of local suppliers is that it is easier to create a good relationship. Because the distances are shorter, you can speak the same language and there are shorter lines of communication. This could mean companies want to excel in their relationships with local suppliers. And therefore neglect the value of products which are leading to leverage products.

6 Conclusion, Limitations and Recommendations

6.1 Conclusion

Local sourcing is a new and emerging topic without substantial backup in literature. Before local sourcing became popular, the literature focused on global sourcing. Which had benefits such as lower costs, higher market share and more profit. But due to various reasons, most of the benefits of global sourcing disappeared. Local sourcing was seen as the next big thing among purchasers. The only downside was that literature has barely touched upon this topic. Therefore, the aim of this study was to find out which products are often sourced locally. And which practices companies used to source their products locally. The following two research questions were formulated:

RQ 1: What products are sourced locally by production companies?

RQ 2: What are the practices to source these products locally?

To be able to answer the research questions. Three main theories were used namely the Kraljic Portfolio Matrix, social capital theory and the seven sourcing practices. As well as other important literature that provided the basis for this research. All the data was collected via interviews to gain new insights and find out why purchasers had certain statements.

Regarding RQ 1, the focus was on finding a wide range of products and the different sourcing strategies associated with them in relation to the Kraljic Portfolio Matrix. The main finding was that three out of the four quadrants were often sourced locally. There was one quadrant namely the bottleneck quadrant which companies often sourced globally. This was mainly due to the fact that this quadrant was high in supply risk and low in the impact on profit. Which means that it was hard to source these bottleneck products locally. Because there were no available suppliers or there was a lack of quality for the bottleneck products. The fact that the bottleneck products weren't high in the impact on profit made companies decide to refrain from an emphasis on making it possible to source these products locally. Yet some companies choose to invest money into bottleneck products. With the reason to attract local suppliers for these bottleneck products. The result is often that these products than shift from the bottleneck quadrant to the strategic quadrant. This was different for products that already fall into the strategic quadrant. Here the supply risk was high and also the impact on profit was high. This ensured companies to put emphasis on making sure that the strategic products are sourced locally. Because these products, in contrast, do represent great value within the company. Local sourcing has benefits such as lower transport times, increased flexibility and more control. The decisive factor to source these strategic products locally was the high value of the products. The last two quadrants were also sourced locally but for different reasons. Routine products have lots of available suppliers and are low in value to the companies. This was also the reason why these products were sourced locally, it was the easiest option for the companies. The last quadrant that was often sourced locally were the leverage products. These products were high in impact on the profit and low in supply risk. This means that the products are of great value to companies and that there are lots of available suppliers. Most companies decide therefore to buy these leverage products locally. Because it will guarantee the local benefits.

Regarding RQ 2, the focus was on finding out which sourcing practices were used by companies when sourcing locally. And after that the sourcing practices were linked to the Kraljic Portfolio Matrix. In the literature it was mentioned that there were seven sourcing practices that companies used to improve the collaboration with suppliers. The thing that stood out was that there were three clusters among these seven sourcing practices. The cluster that was rated the lowest on average by the interviewed companies included resource sharing. The second cluster who got average ratings included incentive alignment, goal congruence, joint knowledge creation and decision synchronization. There was one important outcome in the middle cluster and that was that companies saw the growing importance for joint knowledge creation and decision synchronization. The last cluster who got the highest ratings included information sharing and collaborative communication. In the future there is a chance that joint knowledge creation and decision synchronization are joining the highest cluster. To conclude it stood out that each Kralijc Portfolio matrix quadrant made use of different sourcing practices. This was the case because each quadrant needed specific sourcing practices to function well. Another finding was that companies used the most sourcing practices for the strategic and bottleneck products because these were high in supply risk. The sourcing practices that were used the most are almost all related to communication which plays a big role in local sourcing.

6.2 Limitations

During this study there were some limitations. The first limitation was that the interviewees answered from their own perceptions. With the result that the outcomes are not substantiated by company documents. Another limitation was very specific for this study, namely that all the interviewees were male. It could be that the purchase area is very male dominant. As a result that no knowledge comes from the female perspective. Other limitations were about the interview setup. The interviews were done in a semi-structured way. This was preferred because it wouldn't limit the interviewees in their answers. The only downside is that each answer given could be different per question. Interviewees might misunderstand the question or it could lead to the fact that not all aspects could be discussed in detail with each purchaser. Therefore the answers should not be seen as methods or expectations. But rather as the most important outcomes of the interviews. It is possible that some important outcomes were missing due to the relatively small sample size. In total ten companies were interviewed which gives a good indication. But it is possible that some outcomes are missing. The last limitation was that all the companies were located in or near the Twente region. Therefore it is possible that the answers of this study don't match with companies located in other regions. For example company size, in the west of the Netherlands there are many multinationals and in the Twente region companies are often smaller. This was confirmed by the size of the ten interviewed companies, not one company had more than 250 employees.

6.3 Recommendations for future research

However there are still some recommendations for future research. The first recommendation is that it would be valuable if the same study is done in different regions. This study focused on the Twente region, and it would be valuable to see if outcomes are the same or different for other regions. An example is that the Twente region is known for its close ties among business partners. This could influence the outcomes of this study and therefore it would be useful if this study is done in different regions. The second recommendation is to do further research on local sourcing with the Kraljic Portfolio Matrix. There is still further research possible on this subject, like finding out how the Kraljic Portfolio Matrix relates to local sourcing and sustainability. Sustainability was not emphasized much by the interviewees in this study, this can be emphasized in future research. It is also possible to include other useful frameworks in relation to local sourcing. Examples might be the cluster theory or the principal agent theory. Another recommendation for future research is to do the same study for global and remote sourcing. This would make it possible to compare the different outcomes of all the sourcing strategies. Which is useful to optimize each sourcing strategy on their own. The last recommendation for future research is to do a quantitative study about the findings in this study. For example a survey with a high number of respondents. This allows the findings in this study to be confirmed and correlated to each other.

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Appendices

Appendix A

Table. 1. Interviewed companies

Name	Industry	Products	% local sourced products	Size Small=<50 Medium=51-200 Large=>200	Country	Interviewer
A	Metalworking	Company curves	97,5%	Small	Netherlands	Lars
B	Metalworking	Diamond drill	40%	Small	Netherlands	Lars
C	Construction	Skirting boards, window sills	90%	Medium	Netherlands	Lars
D	Electronics	Installation technology, central heating boilers	60%	Medium	Netherlands	Lars
E	Furnishing	Business walls, cheat screens	75%	Small	Netherlands	Lars
F	Agriculture	Agricultural machinery and manure systems	40%	Medium	Netherlands	Gerald
G	Oil & Gas	Gas turbine systems	60-70%	Medium	Netherlands	Gerald
H	Metalworking	Machinery for metalworking, engineering, laser cutting, robot welding and powder coating	80%	Medium	Netherlands	Gerald
I	Plastic	Customer specific plastic products	20%	Medium	Netherlands	Gerald
J	Packaging	Packaging machines, backs and consumables,	20-25%	Medium	Netherlands	Gerald

Appendix B

Interview questions Local sourcing

Within the introduction, the interviewee is briefly told about the objectives of the interview, and the background of the interviewer. It is explained that the focus of this interview will be on having a 'conversation', rather than a formal interview.

- Recording: First of all, is it OK if I record the interview to analyze the data afterwards?

Part 1: How are you involved with the sourcing process of this company?

Optional sub-questions part 1

1.1 What is your function within this company?
1.2 How long are you working for this company?
1.3 How long have you been functioning in the purchasing field?

Part 2: What is your vision on local sourcing?

Optional sub-questions part 2

2.1 How large is the share of local suppliers relative to the total amount of suppliers?
2.2 How would you describe the relationships with your local suppliers?

Part 3: About the Kraljic matrix: The Kraljic matrix is often used by purchasers to classify sourced products into four quadrants based on complexity of supply market and profit impact (see matrix below).

For every quadrant of the Kraljic matrix, can you give an example of a product that is sourced locally by your organization?

- Examples might be:
  - Leverage: plastic (lego bricks)
  - Strategic: raw materials
  - Non-critical: office supplies
  - Bottleneck: computer chips

Optional sub-questions part 3

3.1 If one or more quadrant(s) are not locally sourced, what is the reason for this?

- No products sourced in this quadrant
- Only globally sourced products in this quadrant

Part 4: What are for this company the motivations to source products locally?

- Examples might be:
  - Cost (purchase price, transportation costs)
  - Quality
  - Accessibility
  - Sustainability (fuel)
  - Social Capital

Optional sub-question part 4

4.1 For every quadrant of the Kraljic matrix, which expected benefits do you seek from local sourcing and which expected benefits do you actually experience?

Part 5: What are for this company the experienced challenges when sourcing locally?

- Examples might be:
  - Lack of skills
  - High costs
  - Loss of technology
  - Loss of control
  - Other risks

Optional sub-questions part 5

5.2 When looking at the Kraljic matrix, do these challenges differ per quadrant?

5.3 Which solutions do you pursue for managing the challenges with local suppliers?

Part 6: How do you stimulate a relationship with your local supplier?

For local sourcing there are several practices mentioned in the literature, these are:
(will be printed or shared by screen)

- information sharing
- goal congruence
- decision synchronization
- incentive alignment
- resources sharing
- collaborative communication
- joint knowledge creation

6.1 On a scale from 1-10, how important is each local sourcing practice for you, when sourcing locally?

6.2 According to your answers, practices X and Y stand out. Can you elaborate how you apply these practices in relation to your local suppliers?

6.3 In part 3 of this questionnaire, for each quadrant an example product was given. Can you elaborate for each product which of the 7 local sourcing practices is most applicable?

Part 7: Closure

7.1 Is there anything that I missed, or that you would like to share with me before we finish?

Thank you for your time. If you have any further ideas you would like to share with me, or questions about the project, please contact me. And I will make sure that you receive the summary of the thesis report and if you like, also the full report once it is finished.

Appendix C

Codebook

Code Group	Code
Changes in the market	Increasing sustainability
	Need for certificates
	Price inflation
	Scarcity of raw materials
Experienced challenges of local sourcing	Availability problems
	High purchase price
	Lack of capacity
	Lack of quality
	Loss of control
	Relationship getting too personal
Importance of seven sourcing practices	High importance collaborative communication
	High importance decision synchronization
	High importance goal congruence
	High importance incentive alignment
	High importance information sharing
	High importance joint knowledge creation
	High importance resource sharing
	Low importance collaborative communication
	Low importance decision synchronization
	Low importance goal congruence
	Low importance incentive alignment
	Low importance information sharing
	Low importance joint knowledge creation
	Low importance resource sharing
Kraljic quadrant	Bottleneck
	Leverage
	Routine
	Strategic
Motivations for local sourcing	Control
	Flexibility
	Gaining market knowledge
	Logistic benefits
	Low stock buffer
	No time difference
	Same corporate culture
	Same language
	Short lines of communication
	Stimulating region
	Stimulating sustainabilty

Code Group	Code
Reasons to use sourcing practices	Better collaboration with suppliers
	Creating a standard process
	Getting supplier rewards
	Improving communication
	Improving products
	Improving the production efficiency
	Increasing purchase certainty
	Increasing quality
	Making better agreements
	Reducing mistakes
Seven sourcing practices	Collaborative communication
	Decision synchronization
	Goal congruence
	Incentive alignment
	Information sharing
	Joint knowledge creation
	Resource sharing
Share of products sourced locally	0-25%
	26-50%
	51-75%
	76-100%
Stimulating buyer-supplier relationship	Making clear agreements
	Making forecasts
	Meetings with suppliers
	Price agreements
	Sharing product information
	Stimulating the collaboration
Tackling local sourcing challenges	Changing parts
	Increase stock
	Increasing volumes to decrease purchase price
	Inviting suppliers to improve
	Making clear purchase agreements
	Perform audits
	Producing products in-house
	Second sourcing
Vision on local sourcing	Nature of product is leading
	Preferably sourcing local, if price or quality difference is too big then global
	Sourcing based on price, but first local and then global

Appendix D

Table. 2. Scorecard sourcing practices

Companies / Sourcing practices	A	B	C	D	E	F	G	H	I	J
Information sharing	6	6	7	10	8	7	8	8	7	8
Goal congruence	8	3	7	9	8	4	7	9	7	3
Decision synchronization	8	7	5	8	7	4	7	9	5	7
Incentive alignment	3	7	7	9	8	3	9	8	2	5
Resource sharing	2	7	5	5	2	2	3	7	7	7
Collaborative communication	6	8	5	10	9	8	8	10	6	6
Joint knowledge creation	6	5	6	8	8	3	8	9	7	5