Global sourcing in times of COVID-19: commodities and benefits

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ABSTRACT
COVID-19 is questioning the benefits of global sourcing/remote sourcing as companies may face supply disruptions. This study investigates which type of goods are sourced intercontinental and in which industry this happens the most. Besides, and maybe more important, the expectations and benefits of global sourcing for the purchasing companies are investigated. Data was obtained by interviewing purchasing managers from fifteen different companies of varying sizes and from different industries. The research was qualitative by nature and conclusions are drawn according to this sample of fifteen companies. In line with the expectations, the price benefit was the most prolific motive for companies to source intercontinental. In regard to the types of goods and industries it is difficult to state a reliable conclusion. The most sourced type of goods are mostly intermediate or unfinished products whereas the responding industries are quite different, and it is unclear to state which global sources the most.

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1. GLOBAL SOURCING DURING COVID-19

At the moment companies may face supply risks as a result of COVID-19 or the so-called coronavirus. The virus is affecting the supply and demand side of the economy. The virus started in China and then spread across the world. COVID-19 was characterized as a pandemic by the World Health Organization (WHO) on the 11th of March 2020 ('WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020', 2020). The complication that arose quickly after the start in China was that European companies had supply chain problems. This because of factory shutdowns and Chinese cities being in lockdown. This paper investigated which commodities are sourced global, in which industry global sourcing is done the most and what the benefits and expectations of global sourcing are. By outsourcing organizations lose control to some extent, also supply disruptions and unreliable suppliers can make a firm more vulnerable for supply risk (Schoenherr et al., 2008, p. 101). Despite, outsourcing is seen as the largest contributor to the increasing world trade (Bandick, 2020, p. 615). The current situation and its problems raised the question whether it is beneficial to source commodities or services global or local. First, the objective of this research is to investigate which types of commodities are more often used for global sourcing and in which industry global sourcing is done the most. Second, the expectations, real drivers and benefits of remote sourcing are researched. During these days with a lot of uncertainty about supply chains, products and supply and demand, it raised the question if remote sourcing outweighs the benefits of local sourcing. In the past years a lot has changed in the world, which could mean that the motives of having remote suppliers have changed. Besides, upcoming benefits could have replaced older benefits and new challenges have come up, as for example the recent COVID-19 virus. This has led to the following research questions:

RQ1: Which types of commodities are more often used for remote sourcing and where do they come from?

RQ2: Which expectations and benefits do firms get from remote sourcing?

These research questions were answered by conducting qualitative interviews with purchasing managers from randomly selected companies. This research could contribute to academic research and practical implementation in three ways. First, there is no research done yet regarding the combination of the types of commodities and benefits of global sourcing in the COVID-19 time. It is interesting to find out if companies have the same motive(s) to source global as when they started sourcing global and if global sourcing is still relevant for them now. Second, existing literature has not made a clear distinction yet between global sourcing seen from a perspective of the buyer and supplier being close to each other or the buyer and supplier being far away from each other. There could for example be significant differences for a Dutch firm buying in Germany or in China. This paper discussed the commodities and benefits which are sourced "remote" in an intercontinental way. Third, the results could be used by companies to improve their supplier base. The implications regarding global sourcing due to COVID-19 could cause companies to view their supplier base in a different perspective. Possibly in a way that the benefits of global sourcing do not outweigh the benefits of local sourcing.

The findings of this study show that mostly intermediate or unfinished goods are sourced global. On industry level, the automotive industry is the leader in global sourcing. Asia is the most named as a supplying continent, whereas specifically China is mentioned the most on a country level. For most companies the price benefit of remote sourcing is their main motive, besides gaining access to technology, a higher availability and quality of goods.

This paper is divided into five parts. Starting with the introduction, whereafter an extensive literature review is done concerning the research question. This literature review is divided in three parts, first the definition of global sourcing is explained. Second, it is explained which types of commodities are sourced global and which industry has the most global sourcing. Finally, the expected benefits or motives are explained. Next, three relating theories will be explained, these are the principal agent theory, the cluster theory, and the social-capital theory. In the third chapter the methodology concerning the research is explained. The empirical findings of the study will be discussed in the fourth chapter and finally, in the fifth chapter, a conclusion will be drawn. All graphs and tables can be found in the appendix. Appendix A is the list of interview questions, in Appendix B are the tables and in Appendix C are all the graphs and networks.

2. THEORETICAL AND CONCEPTUAL BASICS OF REMOTE SOURCING

2.1 Remote sourcing

2.1.1 Remote sourcing as a special form of global sourcing from intercontinental suppliers

"Sourcing is the set of business processes required to purchase goods and services" (Chopra & Meindl, 2007, p.58). Remote sourcing, or mostly called global sourcing in the literature, is a way of buying products or materials within companies. Remote sourcing can be seen as a special form of the overall term global sourcing. In this paper both terms were used interchangeably. When remote sourcing is used, this refers to companies in Europe which source from suppliers outside Europe. Other terms found in literature are foreign sourcing, international sourcing and multinational sourcing, however the term which covers the subject the best is global sourcing. There is a distinction between international and global sourcing. International sourcing happens when firms buy from foreign suppliers. Typically, there is a lack of coordination of requirements between worldwide business units at international sourcing (Monczka & Trent, 1991b, p. 3). Trent and Monczka describe global sourcing as proactively integrating and coordination common materials, designs, methods, processes, standards, specifications and suppliers across international locations (Trent & Monczka, 2003, p. 613). Hefler has another definition of global sourcing: "the more efficient use of worldwide human, material, energy and capital resources" (Hefler, 1981, p.7). The opposite of global sourcing is local sourcing. Local sourcing is purchasing commodities and resources in immediate geographical proximity (Körber and Schiele, 2020, p. 4). Benefits of local sourcing result from similar standards, short distances, same culture, same currency and political conditions. Also, there is a lower disruption risk for the overall supply chain (Ivanov et al, 2019, pp. 122-123).

According to Monczka and Trent (1991 a, b, 1992), the growth of global sourcing in a firm follows a four-phase development process. Ranging from following a strictly domestic purchasing strategy to the development and implementation of global procurement strategies. In the first phase firms do not engage in foreign purchasing and non-domestically produced goods are purchased indirectly through domestic sources. In the second phase companies go abroad for reactive purposes. The material or component is unavailable domestically or there is "an inadequacy on the part of the domestic supply base to satisfy customer requirements" (Monczka & Trent, 1991b pp. 4-5). In

phase three global sourcing is often seen as a key to the globalization strategy of a firm. In the last phase, phase four, firms are distinguished by the development of global sourcing networks, with worldwide purchasing systems and coordination mechanisms (Monczka and Trent, 1991a, b,). This is the phase where the greatest global sourcing benefits are realized. "Firms that successfully create a system that emphasizes the pursuit of a coordinated global sourcing strategy will attain a competitive advantage that influences the success or failure of worldwide business activity" (Monczka & Trent, 1991b, p. 8). But the integration and coordination of global sourcing is difficult. Firms need the highest level of executive management commitment, worldwide coordination mechanisms, complex information systems and the right employee capabilities (Monczka & Trent, 1992, p. 19).

In the literature multiple strategies for global sourcing can be found. Monczka and Trent identified five unique international sourcing strategies that compose the broader "global sourcing" strategy (Monczka & Trent, 1991b, pp. 5-7). These five strategies are all in phase three and four. These five strategies are:

1. "Domestic buyers designated by the business unit for international purchasing"

2. "Business unit uses subsidiaries or other corporate units for international sourcing assistance",

3. "International purchasing offices established throughout the world"

4. "Assign design, build, and sourcing responsibility to a specific business unit somewhere in the world"

5. "Integration and coordination of worldwide global sourcing strategy".

Hefler also described three distinct strategies for global sourcing. The first is finding qualified vendors for the needed materials or products. The second is entering a joint venture relationship and the third is making a 100 percent equity investment in a foreign country (Hefler, 1981, p. 7)

2.1.2 The most suited commodities for remote sourcing

In theory it should be possible to source every commodity abroad if it is available in another country than the domestic country. A company can buy goods/products or services. Adam Smith made a clear distinction between these in his book the Wealth of Nations (1776) (Smith et al., 1976, pp. 438 - 464). He clarified labour in terms of productive (e.g. goods) and non-productive (e.g. services) and identified their characteristics. The most important distinction is the physical or non-physical asset. Goods are physical (tangible) and services are non-physical (intangible). This literature review focusses on the goods, since the focus of this research is on companies which source goods. A company can source three types of goods. These are raw materials, intermediate or unfinished goods and finished goods. Through the development of technology and transportation, trading raw, unfinished, or finished products across borders has become much easier than in the past (Ha-Brookshire, 2015, p. 2). Intermediate goods are incomplete goods which go as an input for further finished goods. An example of this is a car's engine which is placed in the car which is the finished good when leaving the factory. All these three categories of goods are sourced global; however, it differs per industry how much of them are sourced global.

There are some industries in which global sourcing is a very prominent way of sourcing goods. According to a survey from Handfield (1994, p. 42) among US companies, companies in the computer, electronics, automotive, pharmaceuticals and chemicals produce primarily introductory and growth products. A majority of the critical suppliers were foreign based. In the automotive sector China has become a major exporter of parts and components (Liu, 2008, p. 527). As a result of this, China is now the third-largest motor vehicle producer, after Japan and the United States (Liu, 2008, p. 528). Overall, the automotive industry is concentrated heavily on a global scale. Almost 70 percent of the global production is concentrated in only seven countries (Dicken, 2015, p. 591). This means a lot of sourcing in this industry is done global, as the sourcing is concentrated to a few clusters around the world.

Another industry in which global sourcing is a frequent used method is the clothing or apparel industry. According to Dicken the apparel industry is the most globalized of all (see Dicken, 2011, cited according to Ha-Brookshire, 2015, p. 2). In this industry, Asia, and in particular China, plays a big role too. 60 percent of the world total clothing exports originates from Asia, whereas China is the world's biggest clothing exporter. China generates 37 percent of the world total clothing export (Dicken, 2015, p. 560). According to Jin, US companies that have large sales volumes and produce fashion/apparel products, significantly source their products globally (2005, p. 284). Nike from the USA is an example of a company in this industry. Nike does not own any production facility and subcontracts its production to Asian manufacturers (Rothenberg, 2004, p. 335; Dicken, 2015, p. 217).

The technology or electronics sector, as earlier mentioned, is also global. A lot of companies from, e.g. the USA and Europe, source their products from Asia. An example of this is Apple, which lets Foxconn in China manufacture their iPhones and iPads (Dicken, 2015, p. 212). Foxconn is the largest contract electronics manufacturer in the world with approximately 40 percent of its revenues coming from Apple, its biggest client (Chan, 2013, p. 105).

Other, not earlier mentioned, industries in which global sourcing is common are the agro-food industry and extractive industry/oil and gas industry. In the agro-food industry, a lot of products, which are mostly raw materials like coffee beans, are sourced global. Here, China is one of the mayor exporters too. China is the biggest producer of fresh fruit and vegetables (38 percent) followed by India, the USA and Brazil (Dicken, 2015, p. 531). Other examples from the food industry are chickens and coffee beans. Globally the chicken production is dominated by three countries. These three countries account for almost half of the world's total production, these countries are the USA, China and Brazil (Dicken, 2015, p. 531). In the food industry Brazil is also a big player as it exports the most coffee beans. 28 percent of coffee comes from Brazil, followed by countries as Vietnam, Colombia and Indonesia (Dicken, 2015, p. 535). The production of crude oil is widely spread across around the world but in 2012, twelve countries accounted for 67 percent of the world's total (Dicken, 2015, p. 497). The same goes for mined copper, of which 61 percent is produced by five countries, where Chile is the biggest producer (33 percent) (Dicken, 2015, p. 499). Also, China plays again a big role in this industry. China is the world's largest producer of refined copper (27 percent) (Dicken, 2015, p. 499).

Summarizing, the most important commodities which are sourced global are from the automotive, agro-food, oil and gas, fashion or electronics/technology industry. It varies per industry which type of goods are sourced. For example, in the fashion industry mostly finished goods like clothes are sourced. The automotive industry is different regarding the type of goods. All types of goods are sourced ranging from raw materials as steel to intermediate goods as engines and radios to completed cars.

There are also industries, like the agro-food industry, where the sourced product is a raw material, or the raw material is sold as a finished product.

One thing that appears frequently is that Asia and more specifically China is a big supplier/manufacturer in different industries. Next to these countries, the US and some from South America also play a big role. On the contrary, Europe or specific countries from this region are mentioned less often. These European countries possibly source a lot from outside Europe when it comes to the mentioned industries. Possible explanations for this could be the availability of raw materials like coffee beans or crude oil or possible lower production costs in countries like China as stated earlier. In the next section these motives for remote sourcing or perceived benefits are explained further.

2.1.3 The benefits of global sourcing for buyers

In this section the benefits of remote sourcing for buyers are investigated and mentioned by an extensive literature study. Buyers or companies seek for benefits before engaging in remote sourcing. These supposed benefits make companies engage in remote sourcing. A lot of research has been conducted to find the benefits of remote sourcing. But it remains unclear whether global sourcing actually produces the supposed benefits (Horn et al., 2013). According to Vos et al., the positive effects of global sourcing are somewhat overestimated. Nonetheless, most researchers have found that cost differences are the cause of high cost savings with global sourcing (Vos et al., 2016, p. 345).

The three most important benefits of remote sourcing are quality, cost reduction and availability (Cho & Kang, 2001, pp. 544-545; Birou & Fawcett, 1993, p. 29; Bozarth et al., 1998, pp. 242-243; Frear et al., 1992, pp. 5-6).

Consumers and clients value quality as one of the most important aspects of a product. By purchasing globally companies can achieve higher levels of quality for their products. As firms across the globe are able to produce components and finished goods which are on a par with or better than the goods from the domestic country. For example, Japanese firms have achieved numerous successes and have become world leaders when it comes to quality standards. Product quality is now the undisputed, central issue in manufacturing in Japan (Carter & Narasimhan, 1990, p. 4).

Cost reduction or lower prices can be a huge benefit for companies who engage in remote sourcing, as most firms want to acquire high quality products at a low cost (Cho & Kang, 2001, pp. 544-545). In the past, cost reduction has been mostly achieved by purchasing raw materials, currently also sophisticated components and even finished goods are sourced remote (Giunipero & Monczka, 1990; Frear et al., 1992). However, further research has led to some counterstatements. Sometimes the costs end up higher with transport, customs, handling, warehousing etc. (Fawcett & Birou, 1992). Continuing on the absence of direct cost reduction effects, Vos et al. found, the main reason for global sourcing that remains is to increase the competitive advantage (Vos et al., 2016, p. 345). This competitive advantage is also mentioned as a benefit by Birou & Fawcett (Birou & Fawcett, 1993, p. 29). As a result of striving for the lowest costs "ugly twins" start to exist. An ugly twin is the need to resort back to suppliers from high-wage countries at a higher cost (Horn et al., 2013, p. 27). Finally, factor cost advantages, in particular low labour costs, do not always translate automatically into a successful remote sourcing operation (Horn et al., 2013, p. 34).

Availability is also an important benefit of and motive for remote sourcing. It is very common that a certain raw material, intermediate product or finished product is not available in the domestic country (Cho & Kang, 2001, pp. 544-545; Birou & Fawcett, 1993, p. 29).

Other possible benefits or drivers of remote sourcing can be offset requirements, currency restrictions, local content and help meet countertrade obligations (Bozarth et al., 1998, pp. 242-243; Birou & Fawcett, 1993, p. 29; Frear et al., 1992, pp. 5-6). Another possible benefit is the access to new or better technologies by entering new markets (Frear et al., 1992, pp. 5-6; Birou & Fawcett, 1993, p. 29; Bozarth et al., 1998, pp. 242-243). By sourcing remote, companies can achieve shorter product development and life cycles (Carter & Narasimhan, 1990, p. 4; Monczka & Trent, 1991b; Bozarth et al., 1998, pp. 242-243). Some countries can produce or deliver certain commodities and supplies at a lower cost than other countries. This is a comparative advantage which is also a possible motivator for remote sourcing (Bozarth et al., 1998, pp. 242-243). Better terms of delivery and a higher delivery performance can also be benefits of remote sourcing (Birou & Fawcett, 1993, p. 29; Frear et al., 1992, pp. 5-6). Finally, better customer service, help developing a foreign presence and enhancing a firm's image can be possible benefits of remote sourcing for a company (Birou & Fawcett, 1993, p. 29; Frear et al., 1992, p. 5).

2.2 Explanatory theories for remote sourcing

2.2.1 The supplier-buyer relationship: Principal-Agent theory

The origin of the principal agent theory derives from research investigating risk sharing between cooperating entities. It focuses on the problem that two entities have different perceptions and attitudes towards risk (Eisenhardt, 1989, p. 58).

Central in this theory are the principal and the agent. As stated by Rungtusanatham et al. (2007, p. 118),

> "Several crucial assumptions underlie this agency relationship, including […] that the principal and the agent have conflicting goals, that each behaves in its own self-interest, that the agent is more risk averse than the principal, and that information asymmetry exists between the principal and the agent."

The principal delegates responsibility to the agent, who has to fulfil those in the best interest of the principal's business. The so-called agency problem then can emerge because the principal and agent have different interests and the agent does not act in the best interest of the principal (Eisenhardt, 1989, p. 58). Existing literature has criticized this view on human behaviour, since it displays humans as purely opportunistic beings that only pursue their own goals. The agent needs to be controlled because otherwise he might harm the principal whenever it is beneficial for the agent. The theory does not consider that it might be beneficial for both sides to develop a trusting relationship (Shankman, 1999, pp. 329-330).

The principal agent relationship displays contractual relations between two entities and occurs in various business contexts and among those is the buyer supplier relationship (Wohlstetter et al., 2008, p. 241). When interpreting the buyer supplier relationship as a principal-agent relationship, the buyer (principal) delegates work to the supplier (agent). Opportunism from the agent can lead to two conditions, information asymmetry and goal conflict. The information asymmetry refers to the agent having more information than the principal which he intentionally kept, while the goal conflict means the agent and principal have different goals which causes the agent to act in self-interest (Whipple & Roh, 2010, p. 343). Two problems derive from these conditions, the first pre-contractual and the second post-contractual. When

the agent misinterprets his abilities, or hides weaknesses from the principle prior to the contract, this is called adverse selection. Adverse selection is a result of information asymmetry which is caused by hidden characteristics, prior to entering the contract. (Fayezi et al., 2012, p. 557). This can refer to the agent exaggerating his abilities to the principal (Shapiro, 2005, p. 263). The second problem is that suppliers often act differently than agreed in the contract (Steinle et al., 2014, p. 124). More specifically, this so-called moral hazard, occurs when the agent does not comply with agreements, after the contract has been made (Fayezi et al., 2012, p. 557). The agent might ignore the interests of the principal in order to pursue its own benefits (Ketchen & Hult, 2007, p. 576).

In order to mitigate the risks of adverse selection and moral hazard, the principal should take precautions. Pre-contractual screening can possibly decrease the risk of adverse selection, while post-contractual close monitoring as well as rewards and punishment which are defined in the contract can help to mitigate the risk of moral hazard (Kaplan & Stromberg, 2001, p. 429). The agency theory suggests two types of contracts in order to manage the principal agent relationship. The first one is behaviour based, meaning it focused on monitoring the agent's behaviour. The second one is outcome based, which measures the outcomes of the agent's actions. (Rungtusanatham et al., 2007, p. 119). Choosing the right form of contracting is crucial for the buyer supplier relationship. The buyer depends on the supplier to provide products which conform with agreed standards, such as quality and price (Zu & Kaynak, 2012, p. 428). The behaviour-based contracts focus assessing the processes of suppliers rather than the final outcomes (Eisenhardt 1989, cited in Zsidisin & Ellram, 2003, p. 430). Behaviour based contracting is related to supplier quality management. This can require substantial effort, while measuring outcomes is rather a routine task. Therefore, the choice between behaviour-based or outcome-based contracts depends to some extent on the buyer's ability to perform supplier quality management (Zu & Kaynak, 2012, pp. 430-431). When applying an outcome-based contract, it is not possible to measure how the supplier achieved the quality, therefore there is a risk of process/ service failures. Having a behaviour-based contract, it can be ensured that the supplier's processes are stable and reliable (Zu & Kaynak, 2012, p. 440).

As the agency problem focuses on the different interests of the principal and the agent, problems can arise when the products become more complicated. Therefore, it might be that finished goods are the most suited commodity to source remote. As both the supplier and the buyer have the same interest: selling the product. The supplier wants to sell its products and the buyer also wants to resell these products. Raw materials and intermediate products might create conflicts as it is possible to have goal differences at these types of goods. Adverse selection could lead to problems when a supplier manufactures a certain intermediate good which the buyer uses for its end-product. The supplier could exaggerate it abilities to the buyer (Shapiro, 2005, p. 263). Therefore, it might be that less sophisticated, more transparent goods which are used for buying and selling like a wholesaler does are more suited for remote sourcing.

2.2.2 Agglomerations concerning different commodities: Cluster theory

A lot of different explanations and definitions of the cluster theory exist. The first mentioning of cluster theory was by Marshall (1890, pp. 222-231). He talks about the concentration of specialized industries in particular localities which he calls localized industries. Later, a lot more research has been conducted which resulted in multiple definitions of cluster theory. One of the most important researchers on this topic, Porter, has the following definition: "A cluster is a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities" (1998, p. 199). Further definitions of clusters are: "a regional cluster is an industrial cluster in which member firms are in close proximity to each other." (Enright, 1996, p. 191). "A cluster is very simply used to represent concentrations of firms that are able to produce synergy because of their geographical proximity and interdependence, even though their scale of employment may not be pronounced or prominent (Rosenfeld, 1997, p. 4). "We define an innovative cluster as a large number of interconnected industrial and/or service companies having a high degree of collaboration, typically through a supply chain, and operating under the same market conditions." (Simmie and Sennett, 1999, p. 51). "A cluster is an agglomeration of closely related industries." (Delgado et al., 2010, p. 2). Schiele goes a bit further in the definition and does not only mention firms in the cluster. He says a cluster is a spatially concentrated agglomeration of direct competitors, most important customers, innovative suppliers as well as supporting organizations like universities or other educational institutions. Of these institutions other important aspects are the mutual influence and various dependencies (see Schiele, 2003, cited according to Körber and Schiele, 2020. p. 7).

Summarizing these definitions there are some words or terms which are visible in each definition. Words like agglomeration, related industries, interconnected and geographical proximity. So, the most important parts of cluster theory definition are interconnected companies with geographical proximity in a related industry. These clusters bring certain advantages and disadvantages with them. Companies inside a cluster gain different advantages such as access to specialized technologies, synergy effects, cost savings, the possibility of transferring knowledge and innovation and an increase of innovative capacity and productivity. Companies inside this group of companies can be complementary to each other (see Schiele, 2003, cited according to Körber and Schiele, 2020, p. 7; Morgan, 2007, p. 315). Because of this opportunity of cooperation, a cluster offers several advantages to all involved parties (see Kiese, 2008, cited according to Körber and Schiele, 2020, p. 7). For companies outside the cluster, this may result in competitive disadvantages because they miss al the benefits from the cluster (Mazur et al, 2016, p. 273). These are disadvantages for companies outside the cluster, of course there are also possible disadvantages for companies inside the cluster. "Fatal dependencies" can arise between companies within a cluster which can destroy the whole agglomeration of companies (see Schiele, 2003, cited according to Körber and Schiele, 2020. p. 7). Companies become too dependent on each other and if one collapses more or all of them collapse. As companies within a cluster move increasingly closer together, the innovative capacity can decrease. This can cause a certain "blindness" to external ideas and changes. This is called "lock-in" and is something like a tunnel vision. Next to this, significant knowledge and technology can be lost to other companies within the cluster (see Schiele, 2003, cited according to Körber and Schiele, 2020. p. 7).

Coming back to Porter, the cluster theory can be linked to the diamond of national advantage. In this diamond, there are four broad attributes of a nation. These attributes individually and as a system constitute the diamond of national advantage, the playing field that each nation establishes and operates for its industries (Porter, 1990, p. 78). These four attributes are: 1. Factor conditions, the nation's position in factors of production. 2. Demand conditions, the nature of home-market demand for the industry's product or service. 3. Related and supporting industries, the presence or absence in the nation of supplier

industries and other related industries that are internationally competitive. 4. Firm strategy, structure and rivalry. The conditions in the nation governing how companies are created, organized, and managed, as well as the nature of domestic rivalry (Porter, 1990, p. 78). Each attribute of the diamond, and the diamond as a system affects parts for achieving international competitive success (Porter, 1990, p. 79). An effect of this diamond is that the diamond creates an environment that promotes clusters of competitive industries (Porter, 1990, p. 86). Competitive industries are usually linked through vertical (buyer-seller) or horizontal (common customers, technology, channels) relationships and they tend to be concentrated geographically (Porter, 1990, p. 86). Once a cluster forms, the whole group of industries becomes mutually supporting (Porter, 1990, p. 86). According to Porter, companies have the responsibility to play an active role in forming clusters and to work with its home-nation buyers, suppliers, and channels to help them upgrade and extend their own competitive advantage (1990, p. 90).

2.2.3 Networks, relationships and values and beliefs: Social Capital theory

There exist a lot of different definitions of the term social capital. According to R. D. Putnam (2000, p. 4), the core idea of social capital theory is that social networks have value, just like human capital. Coleman (1988, pp. 95-120) defines social capital as a function of social structure producing an advantage, where Nahapiet and Ghoshal (1998, p. 243) define social capital as "[…]the sum of actual and potential resources embedded within, available through and derived from the network of relationships possessed by an individual or social unit." Bourdieu and Wacquant (1992, p. 119) define social capital as the resources that result from a social structure. While examining these definitions, it shows that to some extent they all carry the same message. First, social capital is created in a social structure through connection with different actors. Secondly social capital can be seen as a resource that is useful for either an individual or a company. Nahapiet and Ghoshal argue that although social capital exists in a lot of forms, they all have two characteristics in common. These are that they are all part of a social structure and they act as a facilitator for individuals in the afore mentioned structure (1998, p. 244). Social capital, such as friendship or trust, is created between two or more actors, never by an individual by itself. No individual or firm can thus have the ownership of social capital, like any other form of capital. Social capital should rather be seen as a public good (R. Putnam, 1993, p. 4). In addition, because of this it is hard, if not impossible to trade social capital. Furthermore, Coleman states that social capital depreciates, if left by itself (1988, pp. 95-120). This makes sense if you think of the example that you always must spend time in relationships if you want to keep them.

Past research often separates social capital in three different dimensions: structural capital, relational capital and cognitive capital (Nahapiet & Ghoshal, 1998, p. 243; Yli-Renko et al., 2001, p. 590). Structural capital is defined by (Nahapiet & Ghoshal, 1998, p. 243) as the properties of the social and of the network of relations as a whole. Burt states that social structural capital is about who you reach and how you reach them (2002, p. 207). It is beneficial for the structural capital of an actor to be in the same geographic location. Structural capital thus is not about the actual relation or communication between two actors in a social network, but rather about the framework and the pattern in which this communication is established. The second aspect of social capital is relational capital. Kale, Singh, and Perlmutter state that relational capital refers to "the level of mutual trust, respect, and friendship that arises out of close interaction at the individual level between alliance partners." (2000, p. 222). This also is in line with examples of the relational aspect that Wasserman and Faust (1994, p. 295) propose, which are behavioural interaction and evaluation of one person by another. In addition, Nahapiet and Ghoshal, describe the relational aspect of social capital as the personal relationships that actors have created through a series of interactions (1998, p. 244). All these definitions state that relational capital has to do with the actual relationship between two or more actors. This relationship is built up in a period of time where mutual trust and trustworthiness are important factors in creating the relational capital. Lastly, the third aspect of social capital is cognitive capital, which, according to Nahapiet and Ghoshal, refers to those resources providing shared representations, interpretations and systems of meaning among parties (1998, p. 244). Tsai and Ghoshal state that the two largest aspects of cognitive capital are common values and a shared vision (1998, p. 465). Inside an organization, cognitive capital in terms of a shared vision or shared values can act as a motivator for the actors inside that organization. As the actors inside the organization have an increased level of motivation this can in turn be beneficial for the organization as a whole (Tsai & Ghoshal, 1998, p. 465). In an inter-organizational perspective, cognitive social capital translates to the resources that come forth from codes and shared narratives, values, and other cultural elements (Macke et al., 2010).

A high level of the research that is conducted on social capital links social capital with a firm's capability to create value and competitive advantage. Social capital is seen as an important factor for the worldwide economic growth. Horn, Scheffler, and Schiele argue that the accumulation of social capital is a condition for successful external integration which in turn is of high significance for global sourcing success (2014, p. 90). In addition, Nahapiet and Ghoshal find that social capital increases the efficiency of a firm. This is achieved by reducing the amount of redundant information by sharing all the information across different actors (Nahapiet & Ghoshal, 1998, p. 248) This way not all separate actors have to find this information themselves but everything has to be find out once and then can be shared. Furthermore, R. Putnam (1993) states that with the examining of the rapid growth of economies in East Asia, social capital plays an important role. The social networks for example in China, which are often times based on family, provide a level of trust which can reduce the transaction costs and increase the speed information travels and therefore also the speed at which innovations occur. Putnam also argues that parties are more likely to engage in cooperative activities when there is already a level of mutual trust, which in turn allows for the accumulation of trust (R. Putnam, 1993, p. 5). For example, when two parties have successfully collaborated in one task, the trust rises in future collaboration, even in another unrelated task.

The expectation is that it is more difficult to build up social capital with remote suppliers. In terms of the three facets of social capital that Nahapiet and Ghoshal (1998, p. 246) describe, which are cognitive, relational and structural, there are obvious difficulties that have to be overcome. Since intercontinental relationships often consist of two actors from different cultures, it is likely that they do not have the same values as the other one. Thus, for the cognitive dimension this will probably create issues. Additionally, because of the large distance between the buyer and supplier, there will be limited contact between the actors which makes it harder to build up a friendship and a level of trust. This could be overcome by going to the supplier or invite them to visit via a supplier day. Lastly, for the structural dimension, as stated before, it is beneficial that two parties are operating in the same geographic location. This is not the case for a remote sourcing relationship as this relationship is intercontinental by nature. In conclusion, there are some

difficulties that have to be overcome for buyers who want to participate in remote sourcing, though there are solutions available.

3. METHODOLOGY OF RESEARCH

3.1 The choice of gathering data: interviews

The research in this study is qualitative by nature. To acquire data, interviews were conducted. Advantages of conducting interviews are that it is possible to integrate multiple perspectives and gain deep knowledge about a subject that goes beyond describing. It is possible to explore the reasoning behind arguments (Weiss, 1995, p. 3). Since the objective of this research was to gain a deeper understanding of the motives and reasons of the purchasers, interviews are the choice of data collection.

Despite this drawback, individual interviews are the preferred method over others, such as group interviews, or quantitative methods. That is because group interviews can lead to participants exaggerating their answers due to peer pressure, or participants might be more hesitant to show negative attitudes in fear of disapproval from others (Folch-Lyon & Trost, 1981, p. 445). Further, group interviews make it more difficult to ask targeted follow-up questions to individuals (Watts & Ebbutt, 1987, p. 33). Quantitative methods have the disadvantage to not obtain full information and finding explanations to answers is rather difficult (Weiss, 1995, p. 2). Therefore, the choice for this research is to perform individual interviews.

A semi-structured questionnaire was used for the interviews. Interview questions were given, however it is possible to deviate from this structure when questions have been answered before already, or when questions need to be added in order to obtain more clarity about certain topics (Alsaawi, 2014, p. 151). A semi-structured interview allows to have some control over the direction of the interview, while still enabling the participant to talk freely and highlight things that he/she finds important. This way the participant is not restricted in his or her answering. Besides, a more complete image of the difficulties and solutions of remote sourcing can be obtained. Additionally, by the use of probing, an increased level of reliability can be achieved. This means it is possible to ask more specifically about relevant issues that are raised by the participant or he/she has the chance to clarify the statements. Also, this offers a way for the interviewer to ask more about subjects that are not quite clear or that differ from case to case, which increases reliability as well (Barriball & While, 1994, p. 331). The interview questions are listed in the Appendix as Appendix A.

3.2 The collection of data: visiting companies

For the collection of data fifteen (15) interviews were conducted at companies with persons responsible for the purchasing of commodities from suppliers outside of Europe. These companies are manufacturing or selling a product and are operating in different industries. The companies are selling or producing intermediate goods and finished goods. The size of the companies was varying from medium to big enterprises selling products locally and globally. Since the research was focused on suppliers outside of Europe one inclusion criteria was used. A company should have suppliers from outside Europe (intercontinental). All companies were randomly selected, and these companies were contacted by e-mail or via a personal network. Approximately 80 companies were contacted via email and this led to a response rate of 15%. To raise the response rate and attract more companies for the interviews, companies were called. This has led to a rise of the response rate to 19%. After having contact via e-mail or telephone an appointment was made to conduct the interview.

The data collection was conducted in the form of online interviews such as Google Meet, due to COVID-19. Face to face interviews were sometimes impossible and if possible, company visits were conducted, and interviews held at location. To improve reliability, all interviews were conducted in a quiet environment in a one-on-one interview approach. The interviews were held in the month of May 2020. The interviews were conducted in English, Dutch and German and recorded with a voice recorder. By recording it with a voice recorder it was possible to use the software "Amberscript". This software automatically converts spoken language into text which gives a reliable textual version of the interviews instead of writing it down in own words or keywords. To improve the reliability of Amberscript the textual version was checked with the audio version as the software can make small mistakes. After transcribing these interviews, they were all translated to English.

3.3 The analysis of data: differences become visible

After conducting the interviews and transcribing them, all interviews were uploaded to the software of Atlas.ti. In this program it is possible to code multiple interviews and afterwards analyse them. Before starting to code all the interviews, eight different code groups were made. These code groups were named: "products/goods", "origin", "% remote suppliers", "industry/sector", "type of good", "benefit", "cluster" and "motive". After making the code groups, codes were developed according to the theory and these were put in their corresponding code group. All the interviews were read, and these codes were attached to specific parts of the answers. Sometimes an answer could not be attached to a predefined code. To include these answers a second round of coding was done. In this round all relevant answers were coded with a code which was not linked to the theory part before. Finally, these codes were divided among the code groups too. By doing these two rounds of coding the research becomes more reliable, as much answers as possible which are relevant were included. After these two rounds the total of codes was 73.

The last step of the analysing process was the summarisation and visualisation of the findings. All quotes and its corresponding codes were compared to each other and small summaries of the outcomes were written. By comparing the interviews and its multiple code groups, codes and quotations it was possible to see connections and relationships between interview answers. This led not only to the answering of the main research question but also some sidesteps to origins and clustering were made. After the writing of summaries all the outcomes were visualized in figures and networks. This to be able to understand the outcomes better and provide a quick overview to the results. The findings of this analysis are discussed in the next chapter.

4. THE EMPIRICAL FINDINGS OF THE RESEARCH

4.1 The situation in the companies: case description

As mentioned in the methodology part, the data was gathered at 15 companies from different industries. The names of the companies are not mentioned because of confidentiality. When referring to a specific company a letter like A or B is used. These 15 companies are summarized in table 1. All relevant aspects like the type of industry, the products they sell, the percentage of remote suppliers (in turnover), the size of the company and the country where the company is located are mentioned here. This

is done in a table format to give an easy overview instead of writing small stories concerning each company. Summarizing from this table, the companies were from many different industries which is visualized in figure 1. The companies were different regarding the percent of remote suppliers. Some companies only source 5% of their products outside Europe whereas some companies have this around 80% or 90%. One company did not give a specific percentage because the percentage differs a lot per product group. This division of percentages is made visible in figure 2. The sizes of the companies are classified in SME and big. The European Union (2003) has defined an SME as an enterprises which has not more than 249 employees and an annual turnover not higher than 50 million euros or a total balance sheet not higher than 43 million euros (European Commission, 2015, p. 10). All other companies than these SMEs are big. All companies are located in the Netherlands and Germany. One Dutch company is also partly located in Romania.

4.2 Findings: comparing the cases with Atlas.ti

4.2.1 Intermediate goods are used for remote sourcing and automotive industry sources global

Regarding the type of good, having the possibility to source raw materials, intermediate goods or finished goods. The interviewed companies not only sourced one type of good, there are some which source two types or even three, so adding up all the results does lead to a higher number than fifteen. Only three companies sourced raw materials, where two of them said they source raw steel or iron. “And the parts we as purchasing buy are the raw material, or raw products from foreign companies. And that could be bar material. This really is raw steel” (Company C, p. 1). Out of the responding companies, twelve companies, the majority, sourced intermediate goods. All three automotive companies were sourcing intermediate goods, varying from lighting, metal parts and electronics. Besides this, multiple companies who source intermediate goods source metal parts or components. “Metal parts for the kitchen” (Company B, p. 1). “Components of the automotive and If you then go one step further, I would say 80 percent is in some way, metallic parts” (Company D, p. 1). Five companies sourced finished goods outside Europe. Three of them were wholesalers or shops which almost only trade in finished goods. On the question, “Which goods do you source?”, one company answered: “actually everything but raw materials such as stone and wood” (Company A, p. 1). The fashion store among the interviewed companies also sourced finished goods being it clothes, shoes and accessories:

> “We buy clothes in foreign countries or we give the order to produce them. The production mostly happens in China and sometimes in Italy. It is about clothing, bags, shoes, accessories; basically, everything that has to do with women’s fashion” (Company N, p. 1).

The division of types of goods is visualised in figure 3.

As companies were randomly selected, companies from a wide range of industries were interviewed. These 15 companies were placed into twelve different industries. The industry which was counted the most was the automotive, being represented by three companies. After this was the metalworking industry, being represented by two companies. The rest of the companies were all operating in different industries. All these twelve industries are named with their frequencies in figure 1. It is also possible to compare the industries with the percentages of remote suppliers. This is made visible in table 2. The industries with the highest percentage of remote suppliers are the aerospace industry, automotive industry, fashion industry and IT industry.

The importance of Asia becomes clear as Asia is a supplier to all twelve industries. Out of these twelve industries, companies from nine industries source their goods in China (also in combination with other countries). Among the interviewed companies, China is a supplier to all industries except the harvesting technologies, oil and gas industry and aerospace industry. In contrast to China is the minor frequency of the USA, being a supplier to the aerospace industry and the harvesting technologies among the interviewed companies. The combinations of supplying countries and industries are visualised in figure 4. In the figure each industry is linked to its supplying country and vice versa.

Relating to the principal-agent theory, it is possible that some goods are sourced remote more often because of transparency or simplicity. As some goods are better suited for remote sourcing because of a limited principal-agent problem. This principal-agent problem was mentioned by five companies. They explicitly mentioned adverse selection and some form of moral hazard. For example: “Yes, the latter is of course what you see a lot in China. There are, the first few samples, usually very good and after that it soon becomes less” (Company B, p. 4). As a solution for this they assume a larger 0-series before starting collaboration. “and actually what is done against that is that we always assume a larger 0-series” (Company B, p. 4). Other companies also use this and other methods to decrease the principal-agent problem. One company emphasised a lot on a go and see strategy to prevent them against adverse selection and moral hazard. So, the findings imply that these problems are common. Then it is interesting to see if there is a connection between the type of goods and the suitability of remote sourcing regarding the principal-agent theory. As stated in the theory, less sophisticated, more transparent goods are possibly better suited for remote sourcing than other products. Resulting from the interviews, the most suited commodity was an intermediate good. These products are mostly used in the production process so therefore it is important to decrease the principal-agent problem. It is difficult to see a clear distinction between the type of goods in regard to the principal-agent theory. As the companies which run into these problems with intermediate goods have found their ways in decreasing this agency problem. As company D says:

> “Yes, that's a huge risk, especially if you are not applying a go and see strategy. So one of the things, too, I would not say avoid. But at least make sure that you are as much avoiding those risk is simply go and see. For me, that's vitally important , in my view, in purchasing. You have to be at the location where your material is produced. You should not stay in the office. You have to walk to shopfloor the mine. Wherever you are going, Go to look around. Just observe. Use your eyes. But also the ongoing control. You just talked about things like ethics and business values. You cannot take that from a quotation.” (Company D, p. 6).

4.2.2 Lower costs and prices are the main benefits of remote sourcing

After conducting the 15 interviews one thing immediately became clear. The most mentioned benefit by the companies is the price or cost aspect. Thirteen companies replied in the interview that their main motive or the benefit they found was to increase their margins or the objective was to lower the costs. Citing from one interview “The benefit are the wages and the costs” (Company H, p. 1). Most companies which mentioned this price or cost aspect said this was mainly caused by lower wages in those countries in which they source the products.

However, of these thirteen companies, four said the price advantage is disappearing as a result of rising (labour) costs in Asia and/or China. “The more China develops, the more the costs

there will rise, making it less interesting to go shopping there" (Company B, p. 10). One company thinks that there will come a shift from China to Vietnam, Malaysia or India as money eventually flows to the lowest point. Although this does not change something regarding the lower cost motive as companies only seek for cheaper countries as a solution towards rising costs. Besides rising costs in some countries some companies also have an unclear picture of the real costs involved. This because, next to the labour and product costs, there are also transport costs etc.

> "One thing I think a lot of a lot of companies, including company D, will have to go to in the near future to try to find a way to make the complete cost visual. And make this decision based upon that. And then, indeed, it might be true that what we think is a cheap option is not necessarily the best option anymore" (Company D, p. 4).

The (higher) quality aspect was mentioned specifically only two times by a company, whereas one company stated the quality sometimes is important, but besides a low price. However, quality was sometimes mentioned as a problem. Mostly the quality coming from e.g. China was of an inferior quality compared to European suppliers. "What comes from China is usually of inferior quality" (Company B, p. 6). Besides a lower quality, consistent quality also was a problem sometimes. One of the responding companies was an aerospace company manufacturing parts for commercial and defence aircraft. This company took over suppliers from their customers so there was no specific benefit or motive mentioned. Cited from this interview "In the aviation industry it is less based on cost and more on quality because safety is just so important" (Company K, p. 3). It is then possible to regard the quality aspect as a motive for them to source global.

The availability aspect was mentioned by three companies. This means a company engages in global sourcing to have access to certain goods. This could be raw materials, intermediate goods or finished goods. These three companies had very specific motives for sourcing these materials global. For one company it is the intermediate goods, steering systems, which are not available anywhere except the USA. For the other company, the motive is the availability of expertise and raw materials.

> "But once you are there and purchasing, there are certainly casting companies which cannot be found in Holland or in close to Holland. So there's also, I would not say higher technical level, but expertise, which you can buy over there, material sometimes is a problem in Europe and the Korean companies don't have much trouble under getting raw material like steel powder or stellight materials. There is more available there" (Company C, p. 2).

Other benefits than the previous discussed ones, named by the companies, were "access to technology" (four times), "better terms of delivery and higher delivery performance" (once) and "the supplier which is more willing to work for the buyer" (once). The benefit of access to technology was also mentioned in combination with a higher availability two times. "I would say in the area of technology. With partners from Asia, the price is also certain. But you can't get the steering systems anywhere else but in the USA" (Company G, p. 1). "The company from Dubai was our first supplier and they have such a wide range of presses that they can satisfy the need of almost every customer" (Company O, p. 2). The benefit of the supplier more willing to work for the buyer is interesting, because it does not align with the benefits mentioned in theory. This benefit was mentioned by company C which said:

> "Yeah, I think that started the price and expertise. But why it did continue is also not capability, but willing willingly to produce or be more flexible. From our Europe suppliers you get easier no as an answer […] Asian suppliers are more willing to work for us" (Company C, p. 3).

The answers regarding the benefits or motivating factors of remote sourcing are visualised in figure 5.

As stated in the previous section most companies source their products in Asia, China in specific. By combining the results of the different interview questions, it is possible to analyse the motive or perceived benefit in combination with the origin of suppliers. To start with China, hence this country is mentioned the most. China was related to the following benefits: cost reduction/low price, better terms of delivery and higher delivery performance, higher quality and access to technology. The most counted benefit, cost reduction/low price, was also linked to the most countries, six respectively. These were Mexico, Brazil, China, Vietnam, the United Arab Emirates (UAE) and the Philippines. The UAE was besides the lower price also linked to higher quality, access to technology and a higher availability. India is linked to no benefit as the company sourcing from India did not state a clear benefit for India. The only Asian country, besides India, which is not linked with the cost reduction/low price benefit is South-Korea. South Korea is linked with a higher availability and the supplier is more willing to work for the buyer. Finally, the USA is linked with access to technology, higher availability and higher quality. One company mentioned one extra motive to source in the USA. In this industry sourcing from Asia could lead to problems on the US market, "Sourcing from Asia could lead to problems on the US market. So that's why we split it somehow" "they just refuse raw material from Asia" (Company C, p. 5). All links between the countries and their benefits are visualised in figure 6.

Relating to the cluster theory, nine companies said their suppliers were a bit clustered or definitely clustered. Whereas three companies said their suppliers are not clustered, therefore it is unknown if/or do they not experience advantages or disadvantages from clusters. Three companies said they do not know if their suppliers are clustered and so it is unknown if there is an advantage or disadvantage from clusters. This division of clusters is shown in figure 7. Of these nine companies who say their suppliers are clustered, the majority, six respectively, does not know if they experience advantages or disadvantages from their suppliers who are part of a cluster. Two main reasons were given for this, first, some find it difficult to compare clustered suppliers with non-clustered suppliers. Second, they just do not know if there are advantages, probably because they do not investigate these possible advantages of clustered suppliers. More important for this research are the companies which perceive benefits from having suppliers in a cluster. Three companies said they experience advantages or benefits because of clusters. The benefits mentioned are communication benefits, logistics (e.g. combining shipments), span of control and technological benefits. One company of which a supplier is from Silicon Valley (USA) says: "One of our suppliers is actually in Silicon Valley, probably because of the technology. Whether that brings us advantages or disadvantages. Indirect advantages, probably because of the technology. Not disadvantages" (Company G, p. 2).

Regarding the social capital theory, it was expected that it is more difficult to build up social capital with remote suppliers. As there are obvious difficulties that have to be overcome (Nahapiet & Ghoshal, 1998, p. 246). The results imply that a lot of companies have difficulties regarding the communication with remote

suppliers. Almost every responding company names the communication problem in their top three problems. These communication problems are sometimes related to different time zones, but they are also sometimes related to cultural differences. But despite the expectation of social capital related problems, there are also some companies which praise their relationship with remote suppliers. Two respondents said that sometimes the relation with a remote supplier is better than with a local or European supplier. “I even think that personal relationships are often better with a Chinese person than with a representative of a European company” (Company A, p. 6). It is then possible to view this better relationship as a benefit for doing business.

Finally, companies were asked if their motives of starting with remote sourcing are still the same now. The answers are visualised in figure 8. The majority, nine companies, said their motives are still the same as when the company started with remote sourcing. “Definitely yes. If price were not relevant, we would have no other reason to use suppliers from China because they don't offer us any further added value” (Company F, p. 4). One purchasing manager replied that he did not know the motive at the start and four managers said they did not know if the motive is the same at the moment. Of all these companies only one said the motive back then is different from now. “I think a lot of companies would still then accept maybe a bit more cost of quality because it was so much cheaper. That will disappear. I'm pretty sure” (Company D, p. 10). They think the compromise with price and quality will disappear and that the focus will be put on other things instead of only on the price or cost aspect.

The last figure in the appendix, figure 9, is a network of combining the different industries, originating countries and its benefits. This to provide an overview of the answers given by the respondents and make a combination between the two research questions.

5. DISCUSSING THE GOODS, BENEFITS AND LIMITATIONS

5.1 Lower costs, Asia, and the automotive industry

The aim of this paper was to find out which types of commodities are sourced global and the benefits of global sourcing, therefore two research questions were formulated:

RQ1: Which types of commodities are more often used for remote sourcing and where do they come from?

RQ2: Which expectations and benefits do firms get from remote sourcing?

Regarding RQ 1, the types of commodities which are more often used for remote sourcing are intermediate or unfinished goods, which are then used in the production process to eventually create another intermediate or finished good. Raw materials are the least global sourced commodity. Finished goods are also being sourced global, but this is mostly done by wholesalers or stores and not by companies which manufacture a product. In the theory a distinction was made between the different industries in which remote sourcing is a common practice. Summarising from this the most frequent industries were the automotive, agro-food, oil and gas, fashion or electronics/technology industry. Concluding on the findings, the automotive industry is the industry which sources its goods globally the most. All other industries source the goods global too, so it is difficult to draw a conclusion on this as remote sourcing is common in all industries. The agro-food industry which is mentioned in the theory is not present among the interviewed companies although it was stated that it is a global industry. The automotive industry is also part of the group with the highest percentage of remote suppliers. Thus, it is possible to conclude that remote sourcing is very prolific in the automotive industry compared to the other industries. The origin of remote suppliers in all industries is mostly Asia, specifically China. It is difficult to state a clear conclusion about the type of goods in regard to the principal agent theory as there was not much data provided by the companies. But, in contrary to the theory, the most sourced commodities are intermediate products whereas these can lead to principal-agent problems. But companies have found ways to minimise these problems or prevent themselves against these problems.

Regarding RQ 2, in the theory it was mentioned that the three most important benefits of remote sourcing are cost reduction or lower price, quality and availability (Cho & Kang, 2001, pp. 544-545; Birou & Fawcett, 1993, p. 29; Bozarth et al., 1998, pp. 242-243; Frear et al, 1992, pp. 5-6). Concluding on the findings of this research, the benefit of cost reduction or the lower price paid for the sourced goods is the main benefit. Although some companies have said this price benefit is disappearing due to rising costs or wages in remote countries. Sometimes the real benefit is unknown due to hidden costs. Other benefits or motives that are relevant for companies are the access to technology, higher quality, and a higher availability of goods. The benefit of a lower price is mostly associated with countries in Asia and again China more specific whereas the USA is more associated with higher quality, higher availability, and access to technology. A summary of the main findings is made in table 3.

Some benefits which were discussed in the theory part were not mentioned by the interviewed companies. These were better customer service, enhancing a firm’s image, help developing a foreign presence and shorter product development and life cycles. Increasing a firm’s competitive advantage was also not mentioned specific but this can also be seen as part of the benefit “cost reduction/low price”. Because when a company reduces e.g. its purchasing costs it can increase its competitive advantage.

Regarding the cluster theory, it is unknown if companies have benefits which are related to this theory. There are some which do perceive benefits as a result of clustered suppliers but there is also a big part which does not know if there are benefits or who do not perceive benefits. For the social capital theory, it is possible to perceive benefits of having remote suppliers. As stated in the theory, social networks in China are often based on family which provides a level of trust. Leading to decreasing transaction costs and increasing the speed information travels. This explanation of theory sometimes occurs among companies.

The research did not focus on differences between local and remote sourcing. Besides the distance, there are no specific differences found other than the concluded benefits. The benefits of remote sourcing can be seen as a difference between local and remote sourcing.

5.2 Recommendations for companies who engage in remote sourcing

Companies who engage in remote sourcing should carefully make the decision regarding the origin of their suppliers, especially after COVID-19. As most companies interviewed had the motive of a lower price or cost for global sourcing, there were also some indications that this advantage is unknown due to hidden costs. Therefore, it is recommended for companies to be able to calculate the full costs of remote sourcing and make decisions based on that data. Besides these unknown costs as costs and wages in e.g. Asia, are rising according to respondents. So before making the decision to source global, companies should do research on this. As sourcing goods is more long-term then short-term focused it might be costly to shift if remote sourcing does not live up to its proposed or expected benefits or

expectations. It is possible then “ugly twins” start to exist (Horn et al., 2013, p. 27). Probably these rising costs and maybe more important the environmental impact of global sourcing will lead to a revision of supplier bases of companies. There are some major benefits of remote sourcing as discussed earlier but there are also disadvantages. Some companies said they were less flexible when doing business. Besides the flexibility, a lot of companies had higher stocks to prevent being out of stock when delivery hiccups arise. Since currently these delivery hiccups are occurring due to COVID-19, it is even more relevant to analyse the supplier base.

5.3 Bigger sample and companies who do not source global

There are some limitations regarding this research. First, concerning the interviews. Limitations of the individual interview approach are that participants' responses might be biased. They might want to portray themselves/their company in a different light (Boyce & Neale, 2006, p. 3). Second, interviews always contain a certain degree of bias. The interviewer can influence the responses by the way he or she asks questions. Also, it can differ how interviews and its findings are being interpreted by the interviewer. To prevent this in the future, multiple persons should code the interview transcriptions.

Third, the research was conducted among companies who source global in an intercontinental way. This probably has the most influence on research question one. By doing this the answers to the research questions might have become biased. As all companies were sourcing global there are no answers of companies who do not engage in remote sourcing. So, by interviewing both types of companies it might be truer to draw a conclusion on which goods and in which industry remote sourcing is a common thing and happens the most.

Finally, a bigger sample would have given more representative answers. It is possible that the companies interviewed from the automotive industry were an exception and that normally automotive companies do more local sourcing. This could have caused a biased view. By having a bigger sample, the outcome of the study would have been more reliable. Currently, the sample is very broad and thin, which means that a lot of companies from different industries and industries are being represented by only one or two companies. This makes it difficult to draw a reliable conclusion based on the answers. A bigger sample would also have increased the possibility to see which goods are more suited for remote sourcing in regard to the principal-agent theory. Because now not all companies did give information on this, so it is not reliable to draw a clear conclusion on this in specific.

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7. APPENDICES

7.1 Appendix A: Interview questions "remote suppliers"

1. **Could you explain the nature of your firm and the commodities under your responsibility? (RQ1)**

   - Which industry sector?
   - What commodity group?
   - What is the origin of suppliers?
   - Are these suppliers clustered or dispersed?
   - How large is the share of remote suppliers?

2. **A current issue: How is your company coping with Corona? Any particularities with remote suppliers? (RQ4)**

General approach

   - How is your company affected?
   - Which strategy do you pursue? (Continuing, ramping up)

Particularities of remote suppliers

   - Do you have any special means for remote suppliers?
   - Do you think, after corona, remote sourcing will continue? How is it changing?

3. **Which (a) benefits and (b) challenges did you find with remote sourcing?**

Benefits / reasons to (RQ2)

   - Why did you chose for those remote suppliers (expectations)?
   - How do you screen remote suppliers (avoid adverse selection)?
   - Why did you start with remote sourcing?
   - Which criteria did you apply for choosing for remote suppliers (cost, quality, technology / innovation, availability, sustainability)?

Challenges (RQ3)

Which are the three most common problems you face with remote suppliers?

- SCT: Cognitive / relational / structural challenges?
- PAT: moral hazard occurs / adverse selection?
- CT: Dependent on cluster / penetration problems?
- Are there other problems?
    - How transparent is your supply chain?
    - Losing control?
    - Loss of technology?
    - Image problems
    - Quality issues
    - Risks
    - Did you experience preferred treatment of domestic customers / second class treatment of you?

4. Do you notice a difference if suppliers are embedded in a strong local cluster at their home country?

General approach (RQ3)

- Do the suppliers have a lot of local customers? Are they very advanced?
- Are there many alternative suppliers in that location / country?
- Are the suppliers relying on any specialized institutions (universities, associations, consultants…)
- Are there any special problems with clustered remote suppliers?

Actions (RQ5)

- Are there implications?
- Do you have measures to penetrate the cluster?

Cluster theory

- Is there collaboration between suppliers?
- Is there direct contact?

- What do you do in order to become more attractive than the local customers?

5. Which solutions do you pursue for managing the challenges with remote suppliers? (RQ5)

Main problems → Solution

- You named 1, 2 and 3 as main problems, how do you try to face them?
- Do you have a special process / change / adapted your process for remote suppliers?
- Do you have special measures for remote suppliers / KPI?

Social capital theory

- How do you handle the cognitive (cultural) distance and find solutions for that?
- Is there a special department / function for this?
- How do you stay in contact? Go there, invite them, supplier days?

Principal-agent theory

- How do you monitor the remote suppliers (to reduce opportunism)?

6. Which trends do you see in remote sourcing? (RQ6)

Occurred changes

- When did your firm start with remote sourcing? Any changes?
- Are the motives / objectives still the same?

Expectations for the future

- Does your company prefer local or remote suppliers?
- Are there current trends to localise, reshore, deep localisation?
- Are there changes with I4.0?
- Is the relevance changing?
- Less moral hazard? Less cluster? Less social capital needed?
- How will it be in 10 years?

7.2 Appendix B: Tables

7.2.1 Table 1: Case description companies

Company	Industry	Products	% remote suppliers	Size	Country
A	Construction	Everything needed in construction except raw materials	5	SME	Netherlands
B	Metalworking	Kitchen components	5	SME	Netherlands
C	Oil and gas	Valve bodies/Valves	25	Big	Netherlands
D	Automotive	Hydraulic components	40-50	Big	Netherlands
E	Automotive	Infotainment/ Electronics	65-70	Big	Germany
F	Cleantech/ Environmental Technologies	Water and Wastewater Treatment, MBR Filtration, Odour, Treatment, Stormwater Control	80% (for specific components, overall number varies a lot)	SME	Germany
G	Harvesting technologies	Tractors, mowers, rakes, tedders, silage trailers, wheel loaders and other machinery	30	Big	Germany
H	Intralogistic solutions	Conveying, Loading, Palletising, Packaging, Sortation, and baggage handling	20	Big	Germany
I	Mechanical/ Industrial Engineering	Specialized products for automotive, heating, building etc.	20-25	SME	Netherlands
J	Automotive	Lighting/ Electronics	60 (for specific components, overall number varies)	Big	Germany
K	Aerospace	Aircraft components	80-90	Big	Netherlands & Romania
L	Recreation/Tourism	Parts and decoration for camping/caravans/tents	25	SME	Netherlands
M	ICT	ICT infrastructure	80	SME	Netherlands
N	Fashion	Clothes, Accessories, Shoes	90	SME	Netherlands
O	Metalworking	Aluminium profiles	60	SME	Netherlands

7.2.2 Table 2: Industries in relation to the percentage of remote suppliers

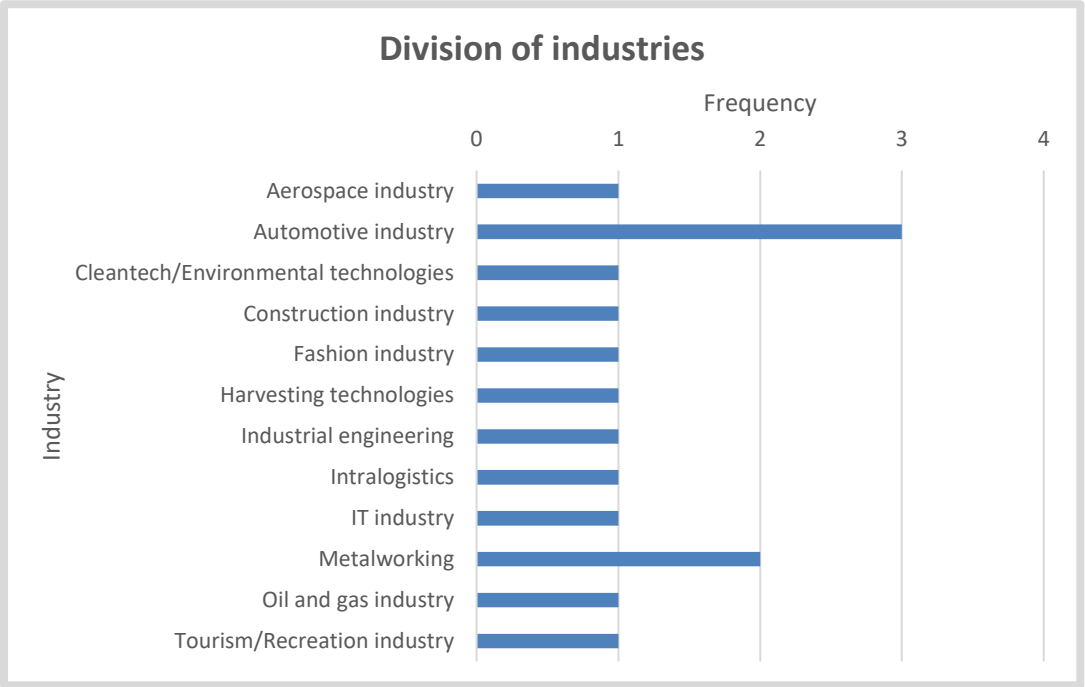
Industry/Percent remote suppliers	0 - 20 %	21 - 40 %	41 - 60 %	61 - 80 %	81 - 100 %	Depends on product group/unknown	Total
Aerospace industry	0	0	0	0	1	0	1
Automotive industry	0	0	2	1	0	0	3
Cleantech/Environmental technologies	0	0	0	0	0	1	1
Construction industry	1	0	0	0	0	0	1
Fashion industry	0	0	0	0	1	0	1
Harvesting technologies	0	1	0	0	0	0	1
Industrial engineering	0	1	0	0	0	0	1
Intralogistics	1	0	0	0	0	0	1
IT industry	0	0	0	0	1	0	1
Metalworking	1	0	1	0	0	0	2
Oil and gas industry	0	1	0	0	0	0	1
Tourism/Recreation industry	0	1	0	0	0	0	1
Total	3	4	3	1	3	1	**15**

7.2.3 Table 3: main findings of the research

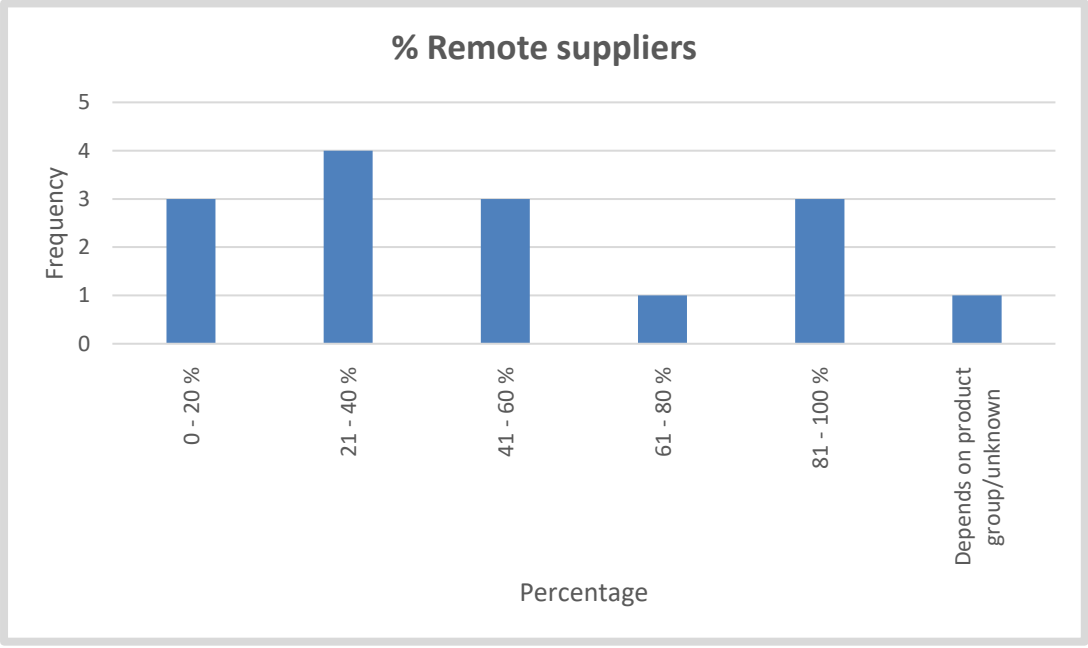
Research question	**Conclusion**
RQ 1 type of commodity	1. Intermediate products 2. Finished goods 3. Raw materials
RQ 1 industry	1. Automotive industry 2. Metalworking 3. Multiple other industries
RQ 1 origin	Origin of goods mostly Asia and more specific China
RQ 2 benefit and expectation	1. Cost reduction / lower price 2. Access to technology 3. Both higher availability and higher quality

7.3 Appendix C: Figures

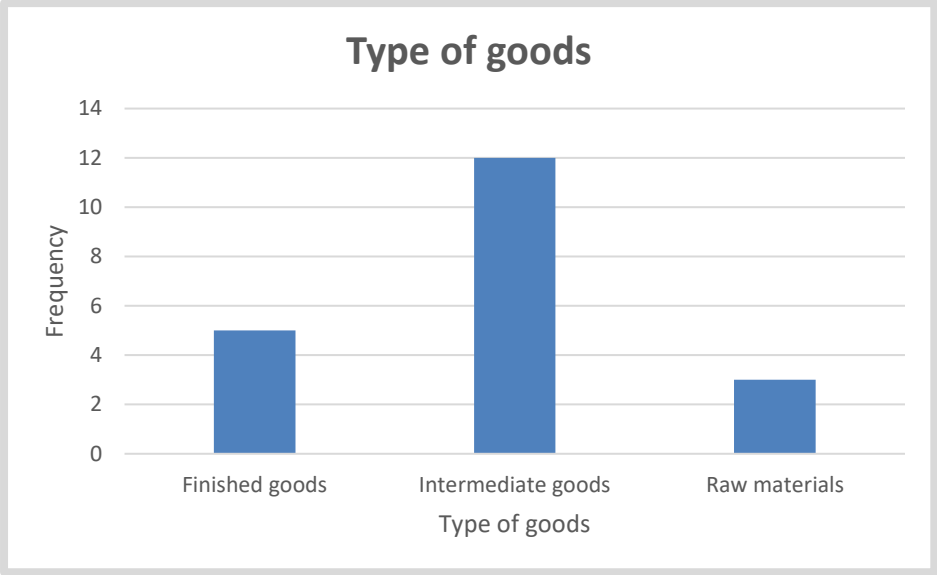
7.3.1 Figure 1: Division of industries interviewed companies



7.3.2 Figure 2: Percentages of remote suppliers among interviewed companies

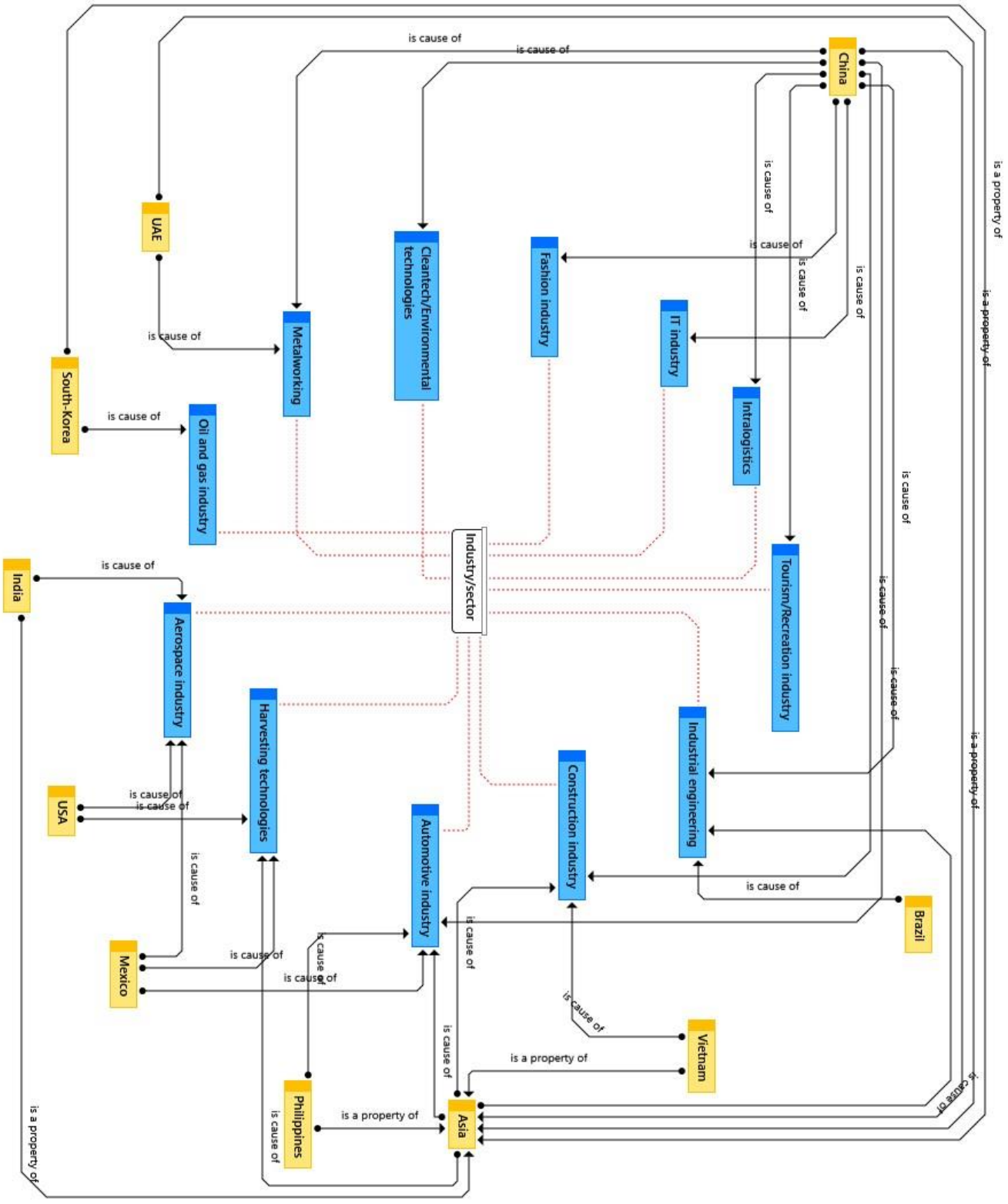


7.3.3 Figure 3: Division types of goods sourced by interviewed companies

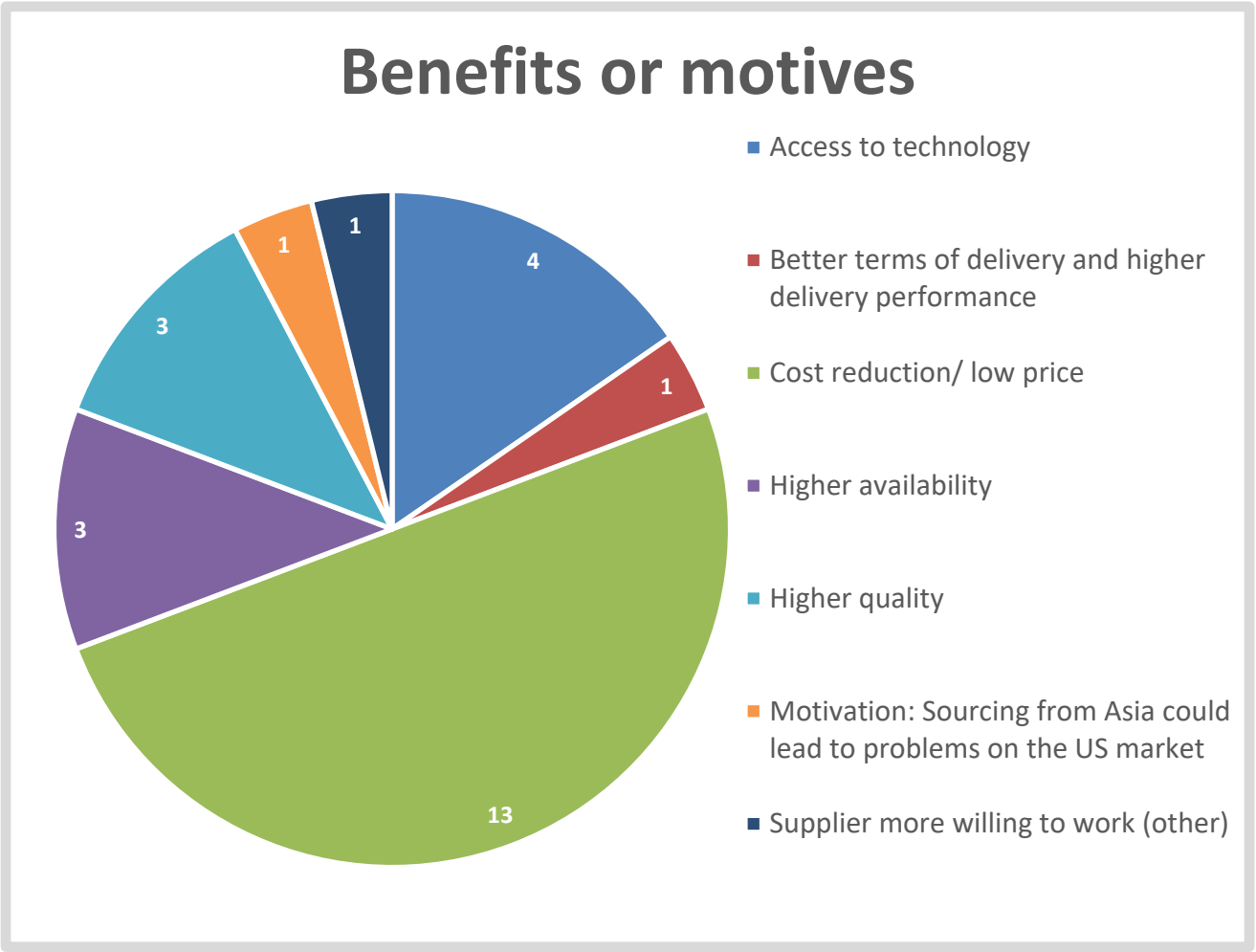


7.3.4 Figure 4: Visualisation of supplying countries and industries in a network format

Blue: industry
Yellow: country

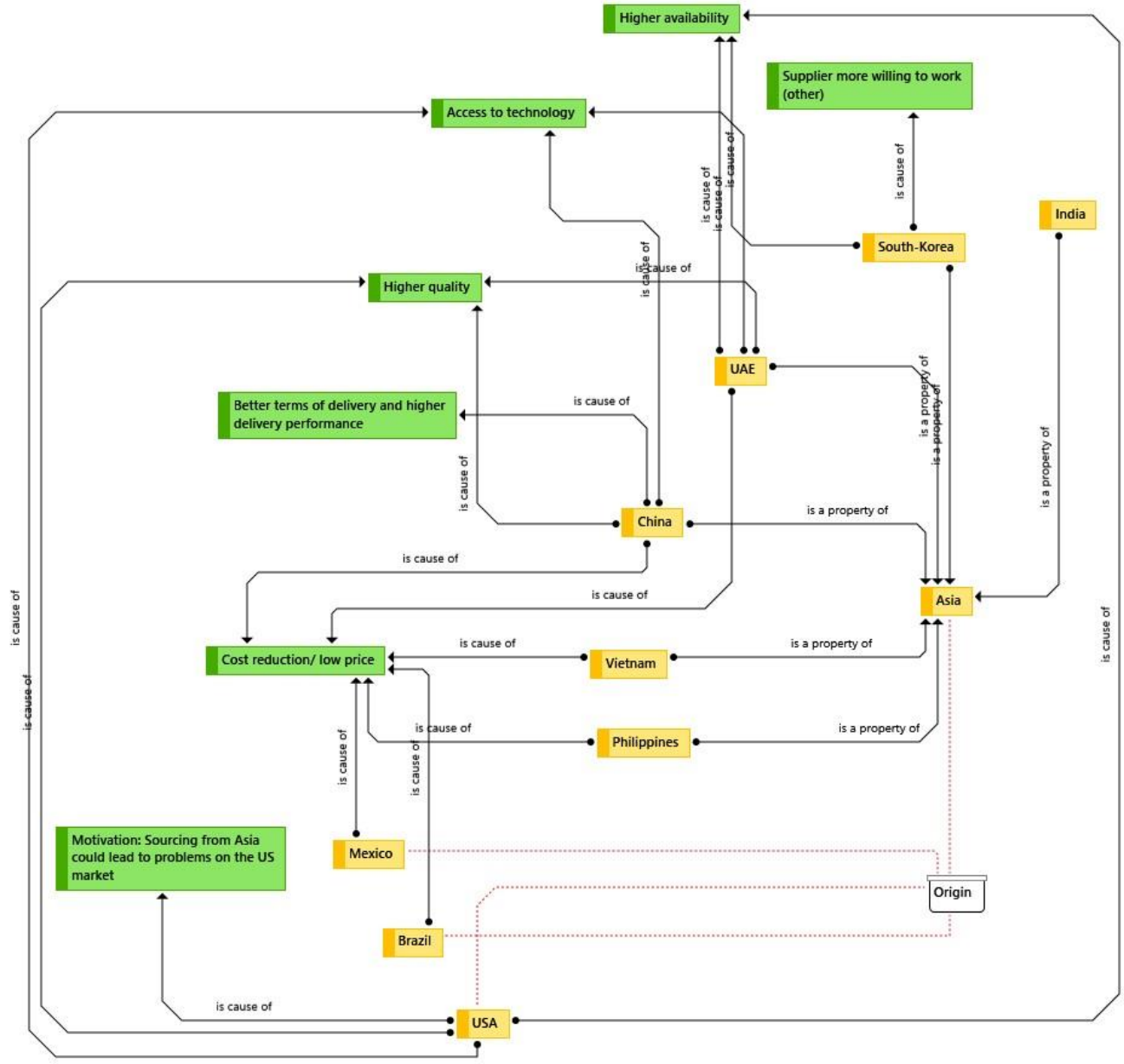


7.3.5 Figure 5: Benefits of or motive for remote sourcing and their frequency mentioned by the interviewed companies

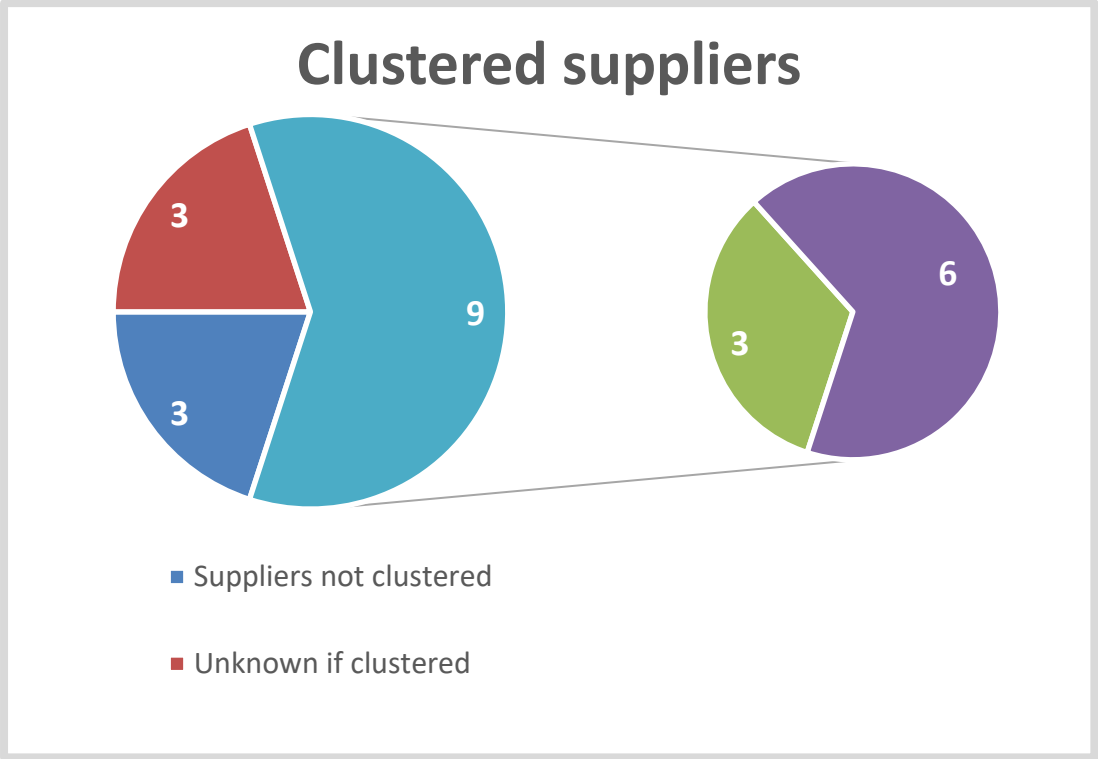


7.3.6 Figure 6: Visualisation of supplying countries and its benefits or motivating factors in a network format

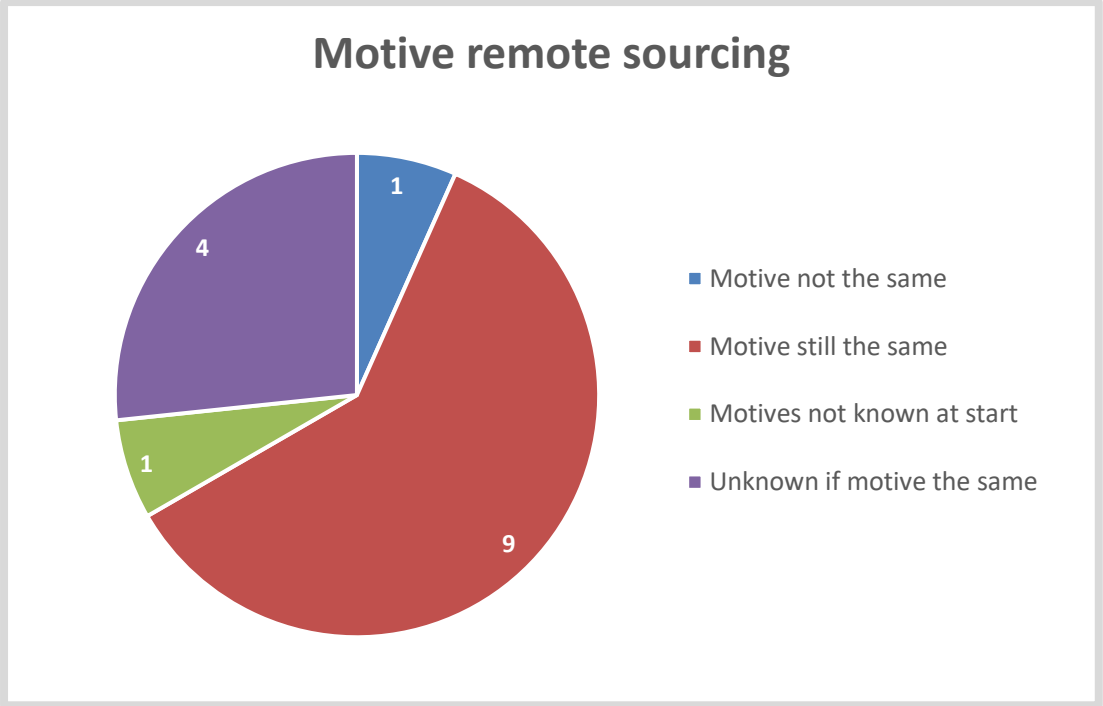
Yellow: supplying country
Green: benefit of or motive for remote sourcing



7.3.7 Figure 7: Division of clustered suppliers and if companies perceives benefits from clustered suppliers



7.3.8 Figure 8: Visualisation of answers if the motives for remote sourcing are still the same compared to the start



7.3.9 Figure 9: Combination network of the benefits or motivators of remote sourcing, the supplying countries, and the industries.

Blue: industry
Yellow: supplying country
Green: benefit of or motive for remote sourcing