

Buyer-supplier challenges arising from local, EU, and transcontinental sourcing: Applying Principal-Agent Theory

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ABSTRACT

In the past few decades, the acknowledgement of global sourcing has grown exponentially. However, there is still a research gap where global sourcing can be differentiated into transcontinental and continental sourcing. These two global sourcing strategies along with the countertrend of local sourcing, all present their own challenges and risks caused by the geographical distance between the buyer and its suppliers and therefore must be assessed separately. Hence, this research investigates the challenges that buying firms face when sourcing within the home country, within the same continent, and across continents applying the Principal-Agent Theory (PAT). The research aimed to find in all three sourcing locations, different types of opportunistic challenges caused by three different information asymmetries (hidden characteristics, hidden intention, hidden action) between the buyer and the supplier and which methods can be used to mitigate such challenges. Analyses are created based on the empirical findings of 21 semi-structured interviews with buying firms from diverse industries established in the Netherlands and Germany and whose suppliers are located locally, within the European Union (EU), and across continents. The results showed different risk levels of opportunistic challenges that buyers face, affected by suppliers, depending on location. Hidden intentions showed the most significant results for opportunistic behavioural activities where suppliers showed signs of changed behaviour after contracting qua performance such as reduced qualities, unpunctual deliveries, and increased prices after contracting. Results also showed different supplier selection, contracting, and monitoring methods such as performance evaluation systems/ programs and emphasized the necessity of on-site checks to mitigate opportunistic supplier challenges. Based on the findings, suggestions are provided for the “best sourcing location” considering all the challenges and risks presented for each supplier location.

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Keywords

Local sourcing, EU sourcing, transcontinental sourcing, buyer-supplier relationships, opportunism, qualitative analysis, principal-agent theory

1. INTRODUCTION: THE RELEVANCE OF OPPORTUNISM IN BUYER-SUPPLIER RELATIONSHIPS

Globalization puts intense pressure on global enterprises to constantly strive for more and more efficient and effective integration and coordination of their activities throughout their organization (Yeniyurt et al., 2013, p. 351). International or global sourcing (Holweg et al., 2011, p. 333) in general means “sourcing goods from suppliers on an international scale” (Bohnenkamp et al., 2020, p. 84). Exponential growth in global sourcing can be seen in the second decade of the 21st century in Poland and several other Central and Eastern European countries (Kedziora et al., 2017, p. 290). Most production activities are still being outsourced to China (Cohen et al., 2018, p. 389), typically due to the low labour costs (Najafi et al., 2013, p. 49). There are two forms of global sourcing identified in this paper, namely 1) transcontinental (remote sourcing) and 2) continental (in this case European sourcing). However, due to legislation differences, a more specific continental sourcing location chosen is European Union (EU) sourcing instead of European sourcing, which creates one of the limitations in this research. Previous literature has not yet made a clear distinction between transcontinental and continental sourcing. Both of these global sourcing strategies present their own problems and risks and therefore must be assessed separately to gain insights.

A contrasting sourcing strategy would be local or domestic sourcing and is often perceived as the least worldly form of strategic sourcing (Trent and Monczka, 2003, p. 622). In this paper, local or domestic sourcing simply concerns sourcing within the buying firm’s home country. Localization is about the transition from global to domestic suppliers (Bohnenkamp et al., 2020, p. 85). Sourcing closer to home can be argued to allow for shorter lead times when making decisions. Nowadays, qualified local organizations and intense global competitors are increasingly challenging global enterprises, on the one hand, to be globally competitive and on the other to be proactive in terms of maintaining optimal responsiveness levels via the strategic adaptation to local market conditions (Yeniyurt et al., 2013, p. 351). Recently and increasingly, firms emphasize the transition from global to local sourcing due to governmental regulations (Bohnenkamp et al., 2020, p. 83).

Remote and local sourcing have differences in time zones and cultures in terms of languages and business practices (Quintens et al., 2006, p. 174 and Cho and Kang, 2001, p. 547). Local, EU, and transcontinental sourcing all have their own challenges and particularities due to their established locations and all kinds of risks that come along with them. Hence, the three different types of sourcing are important to distinguish in order to select “the best location” for sourcing. There are many buyer-supplier challenges. One issue, in particular, that occurs in buyer-supplier relationships is that buyers do not have all the information they need from suppliers before contracting, referring to the so-called ‘hidden characteristics’ problem causing an ‘adverse selection’ (Ceric, 2014, p. 46). Another challenge could be that suppliers behave differently once contracted (Steinle et al., 2014, p. 124) referring to the so-called ‘hidden intentions’ problem causing a ‘hold-up’ (Ceric, 2014, p. 46). For example, price increases and lack of quality after contracting (Steinle et al., 2014, p. 124). These are but a few types of opportunistic behavioural activities by the supplier. Additionally, it can be argued that the bigger the geographical distance between the buyers and suppliers there could be less transparency and are more difficult to monitor the performance of the supplier (Steinle et al., 2014, p. 124), referring to the so-called ‘hidden actions’ problem causing a ‘moral hazard’ (Ceric, 2014, p. 46). Adverse selection, moral

hazard, and hold-up are all caused by asymmetric information (Cerić, 2010, p. 1 and Ceric, 2014, p. 44). Hidden characteristics, hidden intentions, and hidden action are characterized as information imbalances or asymmetries, which can result in suppliers behaving opportunistically i.e. acting in their own interest or taking advantage of circumstances. A trusting buyer-supplier relationship, especially at the beginning, is challenged by the risks of opportunistic behaviour via information asymmetries (Steinle et al., 2014, p. 124).

To examine the challenges of the three types of sourcing strategies, the Principal-Agent Theory (PAT) is applied as the theoretical framework as it helps to analyse the opportunistic challenges faced by buyers and suppliers via information asymmetries. Hence, this paper aims to test the PAT assumptions in buyer-supplier relationships and compare how it differs from the three types of sourcing strategies. Therefore, the research project objective is to test if the conceptual assumptions of opportunistic behaviour, which is a significant factor affecting the buyer-supplier relationships, can be operationalized and to find empirical support for this proposition by conducting expert interviews with buying firms. The research investigates the impact of information asymmetries, which causes opportunistic behaviours to arise on trends of local, EU, and transcontinental sourcing.

This paper contributes twofold: in literature and practice. The academic relevance, as mentioned before, is that existing literature has not yet made a clear distinction between transcontinental and continental global sourcing to understand future trends of global sourcing. Additionally, these sourcing strategies are contrasted and compared along with local sourcing, which will create the added value in related research in providing new insights on challenges from these three sourcing levels that buyers face from different suppliers based on location. Hence, this research paper aims to the contribution to narrow the empirical gap of opportunistic challenges in three different sourcing locations and how these challenges can be mitigated. This will add a new layer of empirical data for further related research. In terms of practical relevance, 21 real-life purchasers from different industry sectors were interviewed to provide their insights on some of the challenges and related impacts on performance and monitoring that they might face with their different suppliers. Differences and commonalities between the three sourcing strategies became clear in the end. Interested parties can benefit from the new insights on buyer-supplier challenges from different locations. Furthermore, purchasing departments can benefit from this study by gaining insights into some of the similar or different struggles purchasers face and how that differs based on suppliers’ established locations. Additionally, they may benefit from the findings on how to improve their supplier selection process as well as the monitoring methods for their suppliers.

The first research question (RQ) aims to provide an understanding of the opportunistic challenges caused by different information asymmetries depending on the location of the suppliers and is established as follows:

RQ1: Which opportunistic challenges caused by information asymmetries can occur when buyers engage in local, EU, and transcontinental sourcing?

The second RQ directly builds on the insights won from the first RQ and aims to identify the ways on how to mitigate opportunistic challenges and is established as follows:

RQ2: Which methods can be used by the buyer to mitigate the opportunistic challenges caused via information asymmetries?

Both RQs are answered by, first providing scientific insights from scholarly sources and afterwards present the practical insights by experts in the purchasing field. The boundaries of the research include limiting the buyer-supplier relationship challenges in three different sourcing locations with the PAT and its related assumptions.

The remainder of the paper is structured as follows. In the next chapter, a literature review on the three different sourcing strategies is discussed. Here, the differences between local, EU, and transcontinental sourcing are contrasted. Chapter 3 concerns the theoretical framework based on the PAT. In chapter 4, the methodological approach for this qualitative research is elaborated upon including the data gathering method. In the subsequent chapter, the empirical findings are provided. This chapter is divided into two parts in which both research questions are analysed separately. In chapter 6, there is a discussion concerning the applied theory to the locational problem. And last but not least, the final chapter concludes the research. Several appendices including tables, figures, and interview questions can be found at the end.

2. LITERATURE REVIEW: SUPPLIER SELECTION BASED ON GEOGRAPHICAL LOCATION: TRANSCONTINENTAL, EU, AND LOCAL SOURCING

2.1 Supplier selection process

First, a distinction is made between two purchasing concepts: strategic sourcing and operative procurement. The former concerns supply planning, supplier selection, and contracting, whereas the latter concerns material ordering, expediting, and paying (Zijm et al., 2019, p. 45).

For the supplier selection process, the criteria that are typically looked at is 1) quality of the product; 2) past experience; 3) past performance; 4) finance; 5) human resource; 6) equipment capabilities; 7) price; 8) capacity to supply; 9) maintaining relations; 10) location of the site; 11) delivery at a time; and 12) technical capabilities (Patil & Kumthekar, 2016, p. 517).

The next step is to come to an agreement with a contract where terms and conditions are included.

De Boer et al. (2001, pp. 75-76) argue that the direct and indirect effects of bad decision-making become increasingly severe as organizations grow increasingly reliant on suppliers (see Appendix B - Figure 1). For example, the increased complexity and importance of decision-making can be especially due to increased outsourcing. This is because more people are involved, there is a larger set of options to choose from, and there are more severe consequences of poor decision-making (De Boer et al., 2001, p. 76). Additionally, governmental regulations require more transparency. Governmental regulations, globalization of trade, and the internet enlarge the purchaser's set of choices (De Boer et al., 2001, p. 76). Next, the ever-changing customer preferences require broader and faster supplier selection (De Boer et al., 2001, pp. 75-76). Finally, both environmental concerns and governmental regulations enlarge the purchaser's criteria set (De Boer et al., 2001, p. 76).

The *geographic sourcing area strategy* emphasizes the location of the suppliers (Ivanov et al., 2019, p. 122). Two extreme forms of sourcing are global and local sourcing with continental sourcing in between (Ivanov et al., 2019, p. 122). In the next subchapters the trends of global (i.e. transcontinental and continental sourcing) and local sourcing strategies are elaborated upon including, *inter alia*, definitions, drivers, barriers, and risks.

2.2 Global sourcing: sourcing from abroad

Golini and Kalchschmidt (2011, p. 87) define global sourcing as "purchasing of goods outside the geographical area to which the company belongs". In this paper, global sourcing is described as organizations procuring goods and services from suppliers located outside the home country to achieve cost savings, procuring innovative products, and in terms maximizing revenue potentials (Schiele and Körber, 2021, p. 1). Global sourcing is often related to terms such as "outsourcing" and "offshoring". Outsourcing can be defined as moving an operation or function that is traditionally performed in-house and jobbing it out to a contract manufacturer or a third-party service provider abroad (Najafi et al., 2013, p. 49). It is argued that organizations can achieve competitive advantages in terms of price, quality, and innovation by maintaining the core activities in-house and outsourcing non-core activities (Dankbaar, 2007, p. 272). Lewin and Peeters (2006, p. 221) define offshoring as "locating activity to a wholly-owned company or independent service provider in another country (usually low-cost)". However, global sourcing does not only prioritize the procurement of low-priced basic products, but also strive for high-quality technical products (Golini and Kalchschmidt, 2011, p. 88 and Nassimbeni, 2007, p. 343). Additionally, the adoption of the global sourcing strategy is mostly influenced by the company itself, the industry it operates in, the type of goods being sourced, and the foreign supplier's location (Golini and Kalchschmidt, 2011, p. 89 and Quintens et al., 2006, p. 174).

The aim of global sourcing by procuring products and outsourcing manufacturing activities allows firms to focus on core competencies and achieving improvements in terms of profitability, flexibility, and efficiency with the ultimate goal of gaining a competitive advantage (Kang et al., 2009, p. 241 and Corinna Cagliano et al., 2012, p. 102). Suppliers also benefit from this strategy since they can achieve competitive advantages by excelling in those activities (Dankbaar, 2007, pp. 271-272). Specialization in the value chain is argued to result in a more competitive product in terms of price, quality, and innovation (Dankbaar, 2007, pp. 271-272).

Ivanov et al. (2019, p. 122) provide examples of the four most important competitive variables or factors namely: 1) Costs: labour, taxes, transportation, insurance, transshipment, duties, and transactions; 2) Quality: bill-of-materials, quality control, after-sales service, certifications; 3) Service: on-time delivery, responsiveness, flexibility, technical equipment, image, reliability; 4) Sustainability: political, economic, social issues.

Although cost, quality, and technological performance are significant competitive factors, nowadays firms aim for time advantages to meet changing customer requirements faster than their competitors (Corinna Cagliano et al., 2012, p. 102). Selecting the best suppliers becomes more crucial for buyers when outsourcing, especially due to the dependency on a restricted number of remote suppliers (Steinle et al., 2014, p. 124 and Schiele and Körber, 2021, p. 2). Reasons for this limitation could be the supplier's cut and single-sourcing activities (Steinle et al., 2014, p. 124 and Schiele and Körber, 2021, p. 2). Additionally, increased reliance on external suppliers, as well as their quality, dependability, and timeliness, may have a substantial impact on the buying firm's reputation: Is our market position strong or weak, and how does it appear for suppliers? (Ivanov et al., 2019, p. 122).

One of the main drivers for global sourcing has been the low costs in terms of labour or technical expertise abroad for example (Holweg et al., 2011, p. 333) or other cost-saving advantages. However, it is still debatable whether or not global sourcing is indeed cost-beneficial i.e. alignment between the estimated

versus the actual costs savings (Vos et al., 2016, p. 338). Quintens et al. (2006, p. 174) divide drivers for global sourcing into five categories. The main barriers per category are listed as follows: 1) *product* in terms of cost advantages (e.g. materials and components), higher qualities and better technologies; 2) *firm/ management* in terms of being a global player in the industry, ensure organizational flexibility, and the integration of global activities; 3) *network* in terms of making use of existing logistics and having a diverse supplier foundation; 4) *industry/ competition* in terms of expansion to new markets and competitive positioning; and 5) *environment* in terms of cost advantages (e.g. labour), legal and economic environmental advantages, and encouragement from abroad governmental regulations.

Global supply chains are more complicated to manage than local supply chains (MacCarthy and Atthirawong, 2003, p. 795) as more partners are involved (Bohnenkamp et al., 2020, p. 87 and Christopher and Peck, 2004, p. 7). Global sourcing is typically associated with higher risks and uncertainties, e.g. increasing risk in instability and complexity in the supply chain (Holweg et al., 2011, p. 333 and Shafiq et al., 2017, p. 1386). Arguably, large geographical distances between the buying firm and its suppliers tend to cause higher transportation costs and longer lead times, complicating the fast decision-making process (Golini and Kalchschmidt, 2011, p. 88). Furthermore, remote global sourcing comes with many risks and uncertainties like changing currency exchange rates and governmental regulations such as trade restrictions, and economic and political instabilities (Golini and Kalchschmidt, 2011, p. 89 and Cho and Kang, 2001, p. 546). Other risks include delays in logistics and transportation as well as cultural differences in languages and business practices (Cho and Kang, 2001, pp. 546-547). Besides different languages, many other cultural components such as values, attitudes, manners, customs, and religions can lead to miscommunications, which in terms can lead to challenges in supplier evaluations, contracting, product inspections and maintaining relationships (Cho and Kang, 2001, p. 547). The tax structure is also a significant factor to consider and differs per country (MacCarthy and Atthirawong, 2003, p. 795). Various risks associated with the procurement of goods and services from global suppliers can impact not only the costs, but also customer service and inventory investments (Shafiq et al., 2017, p. 1386). Quintens et al. (2006, p. 174) divide barriers for global purchasing into the same previously mentioned five categories as follows: 1) *product* in terms of limited volume availability, design changes, and delayed deliveries; 2) *firm/ management* in terms of the need for accurate demand forecasting, increased paperwork, and travelling cost; 3) *network* in terms of JIT sourcing requirements and finding qualified suppliers; 4) *industry/ competition* in terms of various business practices, limited industry information, and intense global competition; and 5) *environment* in terms of differences in time zones, languages, and cultures, lack of governmental encouragement and trade restrictions, and adverse political and economic environments. Recently, new challenges have increased in significant importance. These include the integration of Corporate Social Responsibility (CSR) in business practices, Sustainable Supply Chain Management emphasizing sustainability in supply chains, and compliance with new regulations (Schiele and Körber, 2021, p. 4).

So far, global sourcing has been seen as a conglomerate of continental and transcontinental sourcing (Schiele and Körber, 2021, p. 3). Literature has yet to make a clear distinction when suppliers are located abroad but relatively close to the buyer's home country (continental sourcing) and having suppliers located much further away from the buyer's home country (transcontinental sourcing). Numerous studies provided evidence

for this lack of distinction (Golini and Kalchschmidt, 2011, p. 87; Najafi et al., 2013, p. 49; and Lewin and Peeters, 2006, p. 221). Research done by von Haartman and Bengtson (2015, p. 1301) makes a distinction concerning global purchasing by categorizing the concept between regional and global sourcing, whereas regional sourcing refers to the procurement of goods within the same continent and global sourcing referring to the procurement of goods from other continents. Despite that, there is still a lack of deeper understanding and lack of empirical evidence for the differences between sourcing within the same continent and sourcing across continents and all the drivers, barriers, and related risks that come along with it. A Dutch buying firm, for example, may collaborate and communicate differently with a German or Italian supplier than with a Chinese or American supplier. Additionally, to understand the future trends of global sourcing it is important to analyse both categories (Schiele and Körber, 2021, p. 2). Hence, global sourcing will be dissected into transcontinental and continental sourcing in the next two subchapters.

2.2.1 Transcontinental sourcing: sourcing across continents

Transcontinental or remote global sourcing is a relatively new concept and therefore has no solid definition in literature yet. In this paper, it is defined as sourcing from other continents and is a more extreme form of global sourcing (Schiele and Körber, 2021, p. 1). Here, the buying firm has suppliers located on other continents (Schiele et al., 2020, p. 57). Hence, due to the large geographical distances between the buyer and the supplier, the basic expectations for transcontinental sourcing are considered closely related to that of global sourcing.

Particularly from a European perspective, significant time-zone disparities apply with transcontinental sourcing, cultural differences are more prominent, and legal framework disparities are present (Schiele and Körber, 2021, p. 5). Transcontinental sourcing emphasizes the larger geographical distance between the supplier and the buyer compared to continental sourcing. The larger the geographical distance between the buyer and the supplier, the bigger the risks for longer transportation and lead times (Corinna Cagliano et al., 2012, p. 102) including higher transport costs (Christopher et al., 2006, p. 279). Some of these risks include impacts on available inventories due to the long lead times (Meixell and Gargeya, 2005, p. 533) and potentially causing either product shortages or surpluses (Corinna Cagliano et al., 2012, p. 102). Long lead times along with unreliable remote supplier's demand buying companies to manage higher safety stocks (Golini & Kalchschmidt, 2011, pp. 86-87), which costs a lot (Holweg et al., 2011, p. 338). Additionally, significant fluctuations caused by unreliable transportation infrastructures could jeopardize the delivery performance (Corinna Cagliano et al., 2012, p. 102). Long cycle durations weaken flexibility and responsiveness levels to demand fluctuations this way and they frequently harm the company's reputation and in terms, reduces sales (Corinna Cagliano et al., 2012, p. 102). Furthermore, low prices do not automatically correlate with lower total costs of ownership i.e. considering additional transportation, maintenance, and quality cost (Steinle and Schiele, 2008, p. 3). Additionally, it becomes more challenging to professionalize remote sourcing when buying firms are unable to achieve the preferred customer status of their main suppliers (Steinle and Schiele, 2008, p. 3). This is a key strategy to gain preferential treatment in harnessing suppliers' resources (Hüttinger et al., 2012, p. 1195).

To mitigate supply risks when sourcing remotely, good communication is crucial to building a viable buyer-supplier

relationship due to the lack of face-to-face contact (Körber & Schiele, 2020, p. 5).

After reviewing the literature on global sourcing, expectations for transcontinental sourcing compared to continental sourcing are set and these include: relatively lower purchase prices, longer lead times and unreliable schedules, larger minimum batches (volumes/ quantities), and higher transportation costs due to the larger geographical distance (Ivanov et al., 2019, p. 122).

Advantages of transcontinental sourcing include having the: 1) broadest variety of available vendors; 2) largest products or services portfolio; and 3) best opportunities to compare and negotiate with suppliers due to the broadest supplier base (Ivanov et al., 2019, p. 122).

Disadvantages of transcontinental sourcing include having: 1) longer travel and transportation times; 2) longer response times in the event of changes; 3) possibly larger lot sizes; 4) potentially different norms/standards; and different cultures, currencies, and political uncertainty; 5) higher disruption risks for overall SC (Ivanov et al., 2019, p. 122). Opportunistic behaviour problems are also a disadvantage. For example, external suppliers may behave opportunistically since their incentive structure significantly differs compared to the outsourcing firm (Kotabe and Murray, 2018, p. 372). Opportunistic behaviour allows a supplier to extract more rents from the buyer-supplier relationship than usual, for example, “by supplying a lower than agreed-upon product quality or withholding information on changes in production costs” (Kotabe and Murray, 2018, p. 372).

2.2.2 EU sourcing: sourcing within EU boundaries

Much like transcontinental sourcing, the term continental or close global sourcing is also a new concept. Continental sourcing can be described as slightly international sourcing compared to transcontinental sourcing, which can be described as considerably global sourcing (Schiele and Körber, 2021, p. 4). Continental sourcing will be defined as sourcing from the same continent. Here, suppliers are located within the buying firm’s home country. In this paper, European sourcing is represented as continental sourcing and is seen as an intra-continental form of global sourcing (Schiele and Körber, 2021, p. 5). From a European perspective, continental sourcing entails sourcing from the same legal area and corresponding with the same currency or at least limited currency fluctuations (Schiele and Körber, 2021, p. 5). Due to legislation differences, a sub distinction is also made between European sourcing and EU sourcing. The UK, for example, is categorized under European sourcing since it is still located in Europe, whereas Germany, for example, is categorized under EU sourcing.

The closest term related to continental sourcing in literature is near sourcing, whereas Corinna Cagliano et al. (2012, p. 101) define it as manufacturing or purchasing products and services from foreign suppliers established in continental regions close to the firm’s own facility and customer base to ensure greater responsiveness at relatively low prices.

From a European point of view, continental sourcing entails adopting the same legal system and using the same currency or one with low currency fluctuations (Schiele and Körber, 2021, p. 5). Thus, continental sourcing refers to European sourcing and is defined as trading within the European Union i.e. intra-EU trading (Schiele and Körber, 2021, p. 5). Similar phenomena can be applicable in South-America and South-East Asia according to Schiele and Körber (2021, p. 5).

Nowadays, there are increases in labour cost and currency strengthening in Far East countries, as well as the encouragement from governmental entities to source closer to home by providing

incentives (Corinna Cagliano et al., 2012, p. 102). Corinna Cagliano et al. (2012, p. 105) found that switching from East Asian to continental vendors allowed for a smoother supply chain that enhances flexibility and response to demand volatility, ensuring economic sustainability together with lower transportation costs.

Continental sourcing would further enhance the accessible supplier base compared to the local sourcing strategy, but would still limit the risk of very long transportation times and large volumes (Ivanov et al., 2019, p. 122).

Compared to remote sourcing, continental sourcing allows for shorter lead times, lower logistics costs, and better coordination and communication due to closer cultural similarities (Corinna Cagliano et al., 2012, p. 105). Further, continental sourcing allows for better integration of Just In Time (JIT) deliveries (Corinna Cagliano et al., 2012, p. 102).

Expectations for continental EU sourcing are also set and these include: relatively higher purchase price, shorter lead times and reliable schedules, smaller minimum batches, and lower transportation costs.

2.3 Local sourcing: sourcing domestically

The countertrend of global sourcing is local or domestic sourcing and entails the procurement of commodities, resources and suppliers in immediate geographical proximity (Körber and Schiele, 2020, p. 4). Localization, a relatively new concept, concerns the substitution of internationally produced goods or services with domestic ones (Bohnenkamp et al., 2020, p. 85). Another concept introduced is deep localization and concerns the integration of not just local suppliers but also sub-tier suppliers into localisation activities. Hence, that this a more extreme form of local sourcing since it aims to localise the entire supply chain, including the second-tier suppliers (Bohnenkamp et al., 2020, p. 85). Deep localization recently gained importance due to the increasing value creation in developing countries, thereby reducing the need to import resulting in a reduction of world trade (Schiele and Körber, 2021, p. 2).

Backshoring, reshoring, and nearshoring are all alternatives for global sourcing. These concepts are all closely related but still differ conceptually. Backshoring is about relocating production activities back to the company’s home country (Wan et al., 2019, p. 1). Reshoring covers both backshoring and nearshoring concepts since it defined as the re-location of partial or total production activities from offshore locations to geographically closer locations, whether this means the home country itself or countries nearby (Di Mauro et al., 2018, p. 108). Reshoring has gained popularity caused by the increasing costs in developing countries (Schiele and Körber, 2021, p. 2).

Local sourcing has many advantages. Some of which include: 1) same norms, standards, culture, currency, and political climate; 2) easy to reach or short distances; 3) good basis for JIT deliveries; and 4) lower disruption risks for overall SC (Ivanov et al., 2019, p. 122).

The main drivers for sourcing locally tend to be caused by poor quality from abroad suppliers (Johansson and Olhager, 2017, p. 648 and Dachs et al., 2019, p. 6), better flexibility (Johansson and Olhager, 2017, p. 648) in terms of JIT deliveries and shorter lead times (Dachs et al., 2019, p. 6), and lower costs referring to the total cost (e.g. labour cost, product cost, and transportation cost (Dachs et al., 2019, p. 6) and hidden or unexpected costs that are typically underestimated (Larsen, 2016, p. 315). In the past, companies strived to achieve labour cost-advantages by procuring their goods or services in low-wage countries (Lewin and Peeters, 2006, p. 221). However, rising wages in the host

country have reduced such cost-advantage (Kinkel, 2012, p. 706 and Fratocchi et al., 2016, p. 108).

The aim of local sourcing is usually to deal with the common risks related to global sourcing (Bohnenkamp et al., 2020, pp. 83-84). Localizing the supply chain enables more personal, collaborative long-term supplier relationships (Ashby, 2016, p. 85). In terms, this allows the firm to acquire (in) tangible resources, which can offer sustainable strategic advantages (Ashby, 2016, p. 85).

More and more frequently, consumers' awareness increases in terms of whether or not firms meet Corporate Social Responsibility (CSR) principles and standards, including the impacts that the procurement of their products has on society and the environment and demand to know how and where the firms' products are manufactured and sourced from (Duan et al., 2020, p. 360). Local sourcing also promotes sustainability and commitment to CSR (Ashby, 2016, p. 85), which is becoming a very important concept to consider nowadays by businesses. For decision-makers, selecting sustainable suppliers become challenging as environmental, economic, and social aspects need to be considered (Mohammed et al., 2019, p. 171). The term Sustainable Supply Chain Management (SSCM) increased in importance and is described as the extended concept of sustainability (Wittstruck and Teuteberg, 2012, p. 141) and is defined as "the designing, organizing, coordinating, and controlling of supply chains to become truly sustainable with the minimum expectation of a truly sustainable supply chain being to maintain economic viability while doing no harm to social or environmental systems" (Pagell and Shevchenko, 2014, p. 45). From an economic perspective, local companies support the economy and enable local supplier development (Wouters et al., 2007, p. 230). For businesses, it could reduce various costs such as transaction and monitoring costs. From the social point of view, this leaves a good impression of the company and its brands for the customers Wouters et al., 2007, p. 230). Additionally, customers can enjoy locally produced products and services and can create job opportunities. For businesses, this may potentially help international companies to have a better understanding of consumers and the local market. Additionally, maintaining good relationships with the local government often stimulates local supplier development (Wouters et al., 2007, p. 230). From an environmental perspective, it has a positive impact on the environment in terms of reducing the huge carbon footprint due to shipping or flight cargoes. It also mitigates air and water pollution (Sodhi and Tang, 2019, p. 2947).

Disadvantages of local sourcing may include: 1) (very) limited supplier base or no supplier base; 2) possibly limited bargaining power of buyer because of limitations on the supplier side (Ivanov et al., 2019, p. 123). And perhaps: 3) finding and maintaining qualified and skilled suppliers.

3. THEORETICAL FRAMEWORK: PAT APPLIED TO SHOWCASE THE MISMATCH BETWEEN THE EXECUTING AND DEMANDING UNIT

3.1 Principal-Agent Theory in buyer-supplier relationships

In economics, the PAT was established to examine the challenges that arise when a principal engages an agent to complete a task (Rauchhaus, 2009, p. 873). The PAT assumes that individuals are self-interest seeking entities and includes the opportunism problem (Ciliberti et al., 2011, p. 886). This theory emphasizes that there are different perceptions and attitudes towards risk between two entities (Eisenhardt, 1989, p. 58).

Usually, the principal lacks access to vital information of the agent (Rauchhaus, 2009, p. 873). Moreover, it concerns that organizations are characterized by one party: the "principal" who delegates duties, responsibilities, and decision-making authority to another party: the "agent" through contracts (Zu and Kaynak, 2012, p. 426 and Steinle et al., 2014, p. 124). Depending on the situation, the role of the principal and the agent are determined. In this case, the buyer (principal or demanding unit) with capital hires suppliers (agent or executing unit) with capabilities and capacities, who acts and makes decisions to supply goods and services for the business in exchange for an agreed compensation (Steinle et al., 2014, p. 124). The agent can either reject or accept the contract, which is binding and enforceable (Rauchhaus, 2009, p. 876). It is critical to distinguish between domestic contracting and the necessity to design self-enforcing agreements in the international arena (Rauchhaus, 2009, p. 876). Firms can have multiple contractual relationships with suppliers in which, *inter alia*, the obligations to perform are specified (Schmidt, 2016, p.7). One of the underlying PAT assumptions is that there are conflicting goals between the two units and that the agent is classified as risk-averse (Rungtusanatham et al., 2007, p. 118), whereas the principal is classified as risk-neutral (Schmidt, 2016, p.7). These different levels of risk between the principal and the agent can result in a conflict of interest and information imbalances (Schmidt, 2016, p.7).

Opportunism is defined as "self-interest seeking with guile" (Williamson, 1979, p. 234). This entails that people only aim to achieve their personal goals (Shankman, 1999, pp. 329-330). Opportunism can come in many shapes and forms. For example, disrespecting (intellectual) property rights (IPR), increasing prices after contracting, unpunctual delivery, lack of quality and services, and bribing buyers as a form of manipulation (Steinle et al., 2014, p. 124). Other examples include cheating, stealing, exaggerating one's difficulties, contract breaching, data and truth distortion, lying, false threats and promises, misrepresentation, and withholding information (Steinle et al., 2014, p. 124). All these examples can be categorized into two main types of opportunistic behaviours, namely: 1) passive e.g. quality neglect and capability exaggeration; or 2) active e.g. contract breaching and violation of agreements (Maestrini et al., 2018, p. 325). Steinle et al. (2014, pp. 126-127) make a distinction between strong and weak opportunism, in which the former refers to the violation of explicit contractual arrangements and the latter referring to the violation of unwritten but understood relational norms. Muris (1981, pp. 524-525) makes a distinction between blatant and subtle opportunism, in which the former refers to obvious attempts to behave opportunistically and the latter referring to violations that are inherently hard to detect and may as well be masked as legitimate conduct. Jap and Anderson (2003, p. 1684) make a distinction between ex-ante and ex-post opportunism in which the former occurs before the relationship takes place and the latter occurring after the relationship has been established. Furthermore, opportunism is argued that it always leads to a weakened relationship performance, at least in the long term. It can lead to negative consequences like production disruptions, and in terms cause SC inefficiencies and negative financial impacts (Maestrini et al., 2018, p. 325).

There are two main causes for the principal-agent problem or the so-called "agency" problem namely: conflict of interest and the information asymmetry between the principal and agent (Steinle et al., 2014, p. 124 and Rungtusanatham et al., 2007, p. 118) caused by opportunism (Steinle et al., 2014, p. 124).

In this case, the *conflict of interest* is between the buyer and supplier whereas suppliers can misuse their power by acting in their own interest at the expense of the buyers (Rungtusanatham et al., 2007, p. 118). Thus, only one party, the buyers, bears the

costs and they also need to monitor suppliers and find ways to align their interest. For example, on the one hand, buyers desire more - in terms of quality and service levels, innovation, sustainability, risk avoidance - for less, thus lower prices (Maestrini et al., 2018, p. 325). On the other hand, suppliers strive to meet the requirements with the highest profit margins or revenue potentials (Maestrini et al., 2018, p. 325). Thus, the assumption in conflict of interest is that buyers desire high-quality products for as little money as possible and suppliers desire to deliver as low-quality products as possible and get paid as much as possible (Pavlou et al., 2007, p. 111). Both parties, however, share one mutual interest: a successful transaction (Maestrini et al., 2018, p. 325).

The main challenges that may arise between buyers and suppliers are moral hazard, hold up, and adverse selection, and differentiated by Steinle et al. (2014, p. 124) as the three types of opportunism. All of which are caused by *asymmetric information*, i.e. when one party has an advantage of having more or better information than the other (Ciliberti et al., 2011, p. 886). Information asymmetries are created when the agent's knowledge in its professional field increases because of the labour division and decreases the principal's shared knowledge in contrast (Steinle et al., 2014, p. 126).

Appendix A - Table 1 shows an overview of the distinction between the three types of information asymmetries namely hidden characteristics, hidden intentions, and hidden actions (Meffert et al., 2018). Typically, buyers possess less information concerning suppliers' characteristics, intentions, and actions (Steinle et al., 2014, p. 124). This creates opportunities for the supplier to behave opportunistically and is, therefore, a relevant factor affecting the buyer-supplier relationship. (Steinle et al., 2014, p. 124). While adverse selection emerges when the suppliers show ex-ante misbehaviour, i.e. the buyers are not made aware of certain suppliers' characteristics, moral hazard emerges when the suppliers show ex-post misbehaviour, i.e. the suppliers possessing more hidden information concerning its actions, creating a stimulus for misalignments with the buyer's interest (Ciliberti et al., 2011, p. 886).

Three types of information asymmetries can be distinguished (see Appendix A - Table 1; Appendix B - Figure 2; and Appendix B - Figure 3). Firstly, the information problem with hidden characteristics is when agents have better market and product knowledge (Meffert et al., 2018). For example, there is uncertainty concerning qualities (Theurl, 2010, p. 203; Meffert et al., 2018; and Picot et al., 2008, p. 50). Or the principal does not have all the needed information about the agent pre-contractually (Ceric, 2014, p. 46). It happens before the interaction relationship and is problematic for the principal as it generates adverse selection (Meffert et al., 2018). A classic example often used for adverse selection is that of the automotive industry, in which car sellers have more information about the car's reliability and durability compared to the potential buyers (Rauchhaus, 2009, p. 876). Adverse selection is when the agents exaggerate their capabilities and capacities or hide their weaknesses from the principal pre-contractually (Fayezi et al., 2012, p. 557) to present a better display of themselves (Shapiro, 2005, p. 263). The reasons or main influencing factors as to why this problem occurs is due to "the ability to hide negative characteristics and lack the ability to disclose positive characteristics" (Theurl, 2010, p. 205). The problem of adverse selection is that the agent knows characteristics before signing a contract better than the principal and can behave opportunistically (Theurl, 2010, p. 205). Hence, adverse selections arise due to information imbalances before entering the contract (Rauchhaus, 2009, p. 871).

Secondly, the information problem with hidden intentions is when the intentions of the agents are only detectable after contracting (Meffert et al., 2018 and Picot et al., 2008, p. 50). Steinle et al. (2014, p. 127) describe hidden intentions occur when the "principal is not able to identify the agent's motivation ex-ante and thus cannot predict his behaviour during the contract period". The issue that may arise is that the suppliers behave differently than what is expected post-contractually (Steinle et al., 2014, p. 124). The importance of this issue is that there might be a diminished willingness to perform on the agent's side once contracted (Meffert et al., 2018). The buyer-supplier opportunistic assumption made here is that the supplier has the potential to act opportunistically by accepting the payments and not delivering the products according to contract e.g. by lowering the quality than initially promised (Pavlou et al., 2007, p. 111). The reason why this problem occurs is when the agent behaves opportunistically once contracted due to the feeling of dependency (Theurl, 2010, p. 214). Hidden intentions can be recognized during the interaction relationship and are problematic for the principals as it generates hold-up (Meffert et al., 2018 and Ceric, 2014, p. 46). Hidden intentions may result in a breach of contract, known as the hold-up issue. The hold-up arises, for example, when the agent behaves differently after contracting e.g. lack in qualities and increased prices. Suppliers can fail to comply with the buyer's agreement in multiple ways varying from compromising product quality to delaying shipments to engaging in socially irresponsible practices (Shevchenko, 2020, p. 317). Once the buyer has made investments in a dealership with the supplier and trusts that the supplier will cooperate, the supplier may behave opportunistically and by the time this behaviour is realized, the investment cannot be withdrawn (Ceric, 2014, p. 46).

Thirdly, the information problem with hidden actions is when the principal is unable to monitor, evaluate, or observe the agent's behaviour or performance including their activities and effort levels (Steinle et al., 2014, p. 127; Rauchhaus, 2009, p. 872; Meffert et al., 2018; and Pavlou et al., 2007, p. 110). The reason or main influencing factor for this problem is "the lack of monitoring possibilities and high monitoring costs" (Theurl, 2010, p. 205). It happens during the interaction relationship and is problematic for the principals as it generates moral hazard (Meffert et al., 2018 and Rauchhaus, 2009, p. 872). The problem of moral hazard is "after signing a contract, the agent has more information about his level of effort/his behaviour or the characteristics of the good/the performance than the principal" (Theurl, 2010, p. 210). A moral hazard arises when the insured party has an opportunity to take hidden action once contracted (Rauchhaus, 2009, p. 871). Hence, economists use the terms moral hazard and hidden action interchangeably (Rauchhaus, 2009, p. 874). The moral hazard here refers to the principal not having all the information or transparency to monitor the performance of the supplier post-contractually. Theoretically, *albeit* the principal can observe the agent's actions, it could be challenging for principals to do so in reality due to the high cost or legal restrictions, e.g. privacy laws (Rauchhaus, 2009, p. 875). The PAT assumption made here is that the buyers cannot easily monitor how, for example, the product delivery is undertaken or easily enforce that suppliers will fulfil their end of the transaction (Pavlou et al., 2007, p. 111). When there is a mutual knowledge /understanding that the principal is unable to supervise /monitor the agent's activity and there is an incentive for the agents to engage in opportunistic conduct, the problem of moral hazard arises (Rauchhaus, 2009, p. 875).

The buyer-supplier dilemma here is that strong relationships build over time. Examples of these are supplier commitment and trust (Steinle et al., 2014, p. 124). Suppliers benefit from reliable

business partners as commitment leaves a good impression on other potential customers (Delbufalo, 2018, p. 49).

Opportunistic behaviour can be limited or at least mitigate the risks by, *inter alia*, signalling, screening, and monitoring (Steinle et al., 2014, p. 124). To prevent suppliers' non-conformance, buying firms need to monitor their suppliers as stated by Shevchenko et al. (2020, pp. 315-316). Monitoring suppliers ensures reliable and high-quality supply and is the most direct way to avoid the moral hazard problem since principals will have increased knowledge of the agent's activities (Rauchhaus, 2009, p. 880). The cost and quality of the products may be improved by evaluating and monitoring supplier performance (Nair et al., 2015, p. 6272). Improved pre-contract screening can avoid the adverse selection issue since principals can potentially screen out unwanted agents that are risk- and trouble-makers (Rauchhaus, 2009, p. 881). Another solution for adverse selection is signalling. Unlike screening where the emphasis lies on the principal making the screen-out decisions, signalling emphasizes what agents can do to signal their type (Rauchhaus, 2009, p. 881).

Buyers need to provide the suppliers with incentives to act on behalf of the buyers' interests by either monitoring the suppliers' behaviour or rewarding positive behaviours or outcomes, depending on their effectiveness and related costs (Ciliberti et al., 2011, p. 886). For bad behaviour, punishments need to be considered (Rauchhaus, 2009, p. 881). Appendix A - Table 2 and Appendix B - Figure 3 provide an overview of the root causes and potential solutions for the adverse selection and moral hazard problem (Rauchhaus, 2009, p. 881 and Picot et al., 2008, p. 50). Improved supplier selection and monitoring methods can be for example checking the quality standards of the supplier with certificates such as ISO 9001 (Bayo-Moriones et al., 2011, p. 257).

Pre-contractual screening may assist to reduce the danger of adverse selection, while post-contractual careful monitoring, as well as contractually defined rewards and punishments, may help to reduce the danger of moral hazard (Kaplan & Stromberg, 2001, p. 429).

4. METHODOLOGY: EXPERT INTERVIEWS AND COMPREHENSIVE DATA COLLECTION

4.1 Research design: A dual approach

The research design is a combination of conducting both a literature review and qualitative empirical analysis by conducting interviews. All data are collected, assessed, and evaluated.

First, a literature review was conducted to gain theoretical insights on existing secondary data concerning the three strategic sourcing trends as well as a common understanding of PAT. Since transcontinental sourcing is a new concept, the applicable assumptions for global sourcing were mostly used. Additionally, since continental (EU) sourcing is also just being introduced, the applicable assumptions for near sourcing were also mostly used. For both these new concepts, some assumptions or certain expectations were also personally added. After the literature review on local, EU, transcontinental sourcing, where drivers and challenges of each sourcing strategy were mostly discussed, the PAT and underlying assumptions were elaborated upon.

The literature review was mainly based on articles of scientific literature. The main search database used for finding articles was SCOPUS. Google (Scholars) was also used as a search database for faster and more detailed insights on specific matters or company's viewpoints.

4.2 Data collection via interviews

For the second part of the research, a qualitative methodological approach has been applied where interviews with buying firms are conducted concerning the buyer-supplier challenges in the context of three different sourcing strategies. Since the objective of the research is to gain insights on some of the challenges buyers might face from suppliers located locally, within the EU, and across continents, a qualitative methodological approach is applied as it aims to produce an in-depth and illustrative understanding of the problem under investigation (Queirós et al., 2017, p. 370).

The qualitative method chosen is individual interviews, which can provide a deeper understanding of the challenges and measures on the topic that goes beyond a literature review (Schiele et al., 2021, p. 57). The interviews were conducted in a semi-structured way i.e. collecting open-ended data and gaining insights on the thoughts and understanding on the related topic (DeJonckheere and Vaughn, 2019, p. 1). This approach is direct and personal with each participant and allows them the freedom of delving into some of the topics and therefore does not restrict the interviewee from providing insights on the related topic (Queirós et al., 2017, pp. 377-378). Therefore, it provides greater flexibility and explorative analysis compared to a quantitative approach (Queirós et al., 2017, p. 371). Additionally, semi-structured interviews are designed in a conversational manner where pre-determined questions are asked to each interviewee (Schiele et al., 2021, p. 57). However, deviation from the pre-determined questions are possible when questions have already been answered or additional (follow-up) questions can be asked to gain more clarity on certain topics (Alsaawi, 2014, p. 151). Additionally, it allows to justify previous answers and building a link between various topics (Queirós et al., 2017, p. 378). The limitation of this individual interview approach, however, is that participants should be carefully selected to avoid bias (Queirós et al., 2017, pp. 378-379). For example, those who work in the organization or the corporation being questioned. Another limitation is that it is not generalizable (Queirós et al., 2017, pp. 378-379). Regardless of these disadvantages, a quantitative methodological approach would not be appropriate since it does not allow for an in-depth understanding of the related topic and instead aims to acquire accurate and reliable measurements for statistical analysis (Queirós et al., 2017, p. 369).

The interview process was structured as follows: 1) designing the pre-defined questionnaire; 2) recruiting the participants; 3) conducting the interviews; 4) transcribing the interviews; 5) coding the interviews; and 6) analysing the results. The first four steps are further elaborated in the remainder of this subchapter and the last two steps in the following subchapter.

The interviews aimed to test whether the buyer-supplier challenges and assumptions based on the sourcing strategy from literature are truly observable in practice. Before recruiting the participants, a pre-determined questionnaire (see Appendix C) has been created based on the Principal-Agent theory and the Social Capital theory, *albeit* the focus of this paper is only PAT-focused.

For the recruitment of participants, the interviewee should be someone responsible for the procurement of products or services (e.g. a purchasing director or manager) with the additional requirement of having suppliers in at least two out of the three sourcing locations (i.e. local, another EU country, outside of Europe). The buying firms are from different industries and are established in the Netherlands and Germany. The buying firms ranged from small, medium, and large-sized enterprises and sold goods locally as well as internationally. Most selected companies had a high share of local and EU suppliers.

In this research, 21 semi-structured interviews were conducted during the pandemic with buying firms from different industry sectors, which are affected by local, EU, and/or transcontinental suppliers. This may seem like a lot of interviews for one person to achieve, given the limited time period for completing this research. This is, however, possible because the qualitative data have been collectively collected in cooperation with five other BSc circle participants, each interviewing about five buying firms. Important to mention is that each BSc circle participant was responsible for their own transcription, coding, and data analysis.

The interviews were one-on-one online meetings, mostly hosted via Zoom or Microsoft Teams, due to the current COVID-19 pandemic in which face-to-face meetings were nearly impossible. The interviews mostly took place in April and May of 2021 and were conducted in either the English, Dutch, or German language. With the participant's consent, the interviews were recorded with the recording feature provided in the related online meeting platform. In semi-structured interviews, recordings are essential to deal with a large amount of data material the interviewer gets (Alsaawi, 2014, p. 152). The majority of interviews lasted about 45-60 minutes.

After conducting the interviews, the recordings had to be transcribed. The transcriptions were partly done with the software program: AmberScript. This program automatically converts voice recordings into text efficiently, *albeit* manually proofreading and making necessary changes are a must to ensure the quality of the transcription. Regardless, it is time-efficient not having to write everything down yourself. After reviewing the transcription, the non-English transcriptions still had to be translated. The translations were aided with the website: DeepL, which enables whole documents to be translated into the desired language.

4.3 Data analysis & evaluation via interview coding

After the interviews were conducted and transcribed, the data has been uploaded to the software program: Atlas.ti to code all interviews and ultimately an analysis of the empirical findings have been made. This program allowed for systematic coding to have a better picture of the interviews and aided in the analysis and evaluation of qualitative data in an organized manner.

The codes were designed based on the key findings on the PAT and the commonalities in the interviewees' answers. Literature provided three different forms of information asymmetries: hidden characteristics, hidden intentions, and hidden actions. Criteria for each of these information imbalances have previously been discussed in chapter 3.

The codes were created by first looking at the similarities in the way the interviewee answered the main questions. Next, similar identified problems were given a specific code. The next chapter provides various summarized overviews and visualizations of the findings.

The frequencies of the codes/subcategories/categories are used to determine its relevance in the analysis. Hence, qualitative data can be obtained out of the interviews, which in terms could be transformed into quantitative data by coding.

The codes were manually grouped into categories to provide clear overviews and visualizations. Code groups from Atlas.ti were not necessarily used because the codes were already very specific. Thus, the codes were structured in such a way that the categories/subcategories were already included at the beginning of the actual code.

5. EMPIRICAL FINDINGS

5.1 Introduction of interviewed companies

A total of 21 interviews with purchasers have been conducted in regards to, *inter alia*, some of the challenges they might face engaging in local, EU, and/or transcontinental sourcing. The purchasers had current suppliers in at least two different locations. Of the 21 companies, a total of 18 engaged in local sourcing, 19 in EU sourcing, and 13 in transcontinental sourcing (see Appendix B – Figure 4). A short overview of the companies can be found in Appendix D. For confidentiality reasons, the names of the firms are not revealed. A 'codename' is used consisting of a letter and a number to designate and refer to a certain firm.

Three main PAT interview questions were established by Prof. Dr. Schiele concerning three different types of information asymmetric problems namely: 1) Did you get all the information you needed when selecting this supplier? (**hidden characteristics**); 2) During the interaction, did you have the feeling that the supplier was behaving differently than promised? (**hidden intentions**); and 3) Did you get all the information/transparency to be able to monitor the performance of the supplier? (**hidden action**).

5.2 Analysis RQ 1: Which opportunistic challenges caused by information asymmetries can occur when buyers engage in local, EU, and transcontinental sourcing?

5.2.1 Hidden intentions show the most significant results for risks of opportunistic behavioural activities

Based on the interviewees' answers, first, a decision has been made whether or not the purchaser has experienced problems with each of the three types of challenges (i.e. hidden characteristics, hidden intentions, hidden actions) and differing according to supplier location. When it appears that the interviewee clearly has had no issue with either one of the three above-mentioned problems in any of the different supplier locations, then this problem was marked/tested as 'negative'. However, when it appeared that there was an issue in either one of the three types of challenges, the type of issue was only marked one time as 'positive' per supplier location per specific asymmetric information problem, such even though the buyer could have faced multiple problems within the same type of information asymmetric problem. For example, if the buyer experienced for hidden intention (changed behaviour after contracting) a lack of quality, unpunctual delivery, and increased prices, this has been marked only one time as positive for hidden intention depending on location. Table 1 below shows a brief description that made the qualification for testing 'positive' for the three types of problems. This description was influenced by the assumptions from literature, the formulation of interview questions, and the way the interviewees answered the question.

Table 1: Description for testing 'positive' for hidden characteristics, hidden intention, and hidden action

Type of problem	Description for testing "positive"
Hidden characteristics (HC)	Limited info/knowledge/ transparency before contracting concerning price, quality, capability, capacity, or other info
Hidden intention (HI)	Changed behaviour after contracting in terms of performance e.g. lack of quality,

	increased prices after contracting, unpunctual delivery, lack of quantity
Hidden action (HA)	Limited information/ transparency/ ability to monitor the performance

Once the companies were tested “positive” for problems i.e. they have experienced a particular problem with their suppliers, then follow-up research is done as to why they were tested “positive” in the first place and a more detailed overview is provided as shown in Appendix A - table 3. Furthermore, interview examples for each type of problem are provided in the following sub-subchapters (5.2.1.1 – 5.2.1.3).

Figure 1 shows the type of hidden information asymmetric problem that showed the most significant results for opportunistic activities is ‘hidden intention’ referring to suppliers behaving differently than agreed upon post-contractually. This could for example relate to a lower quality of products/services being supplied or that prices of goods/services increased after contracting. The frequency of ‘hidden intentions’ tested “positive” in the EU might be slightly higher compared to the other two sourcing locations. This is due to the circumstance that most of the 21 interviewed companies had more suppliers within the EU compared to transcontinental suppliers. Hence, this graph is only to indicate which type of information asymmetric problem showed the most significant results for different types of opportunistic behavioural activities. Regarding hidden characteristics, many companies mentioned that they believed to have acquired all necessary information before selecting the supplier. In comparison with hidden characteristics, hidden action had a somewhat higher frequency of results. This is because some purchasers mentioned that they did not or could not monitor the supplier other than contacting them via email, phone, which limits the transparency to monitor the performance. Other companies were unable to monitor or only allowed a limited level of transparency to see into their operations.

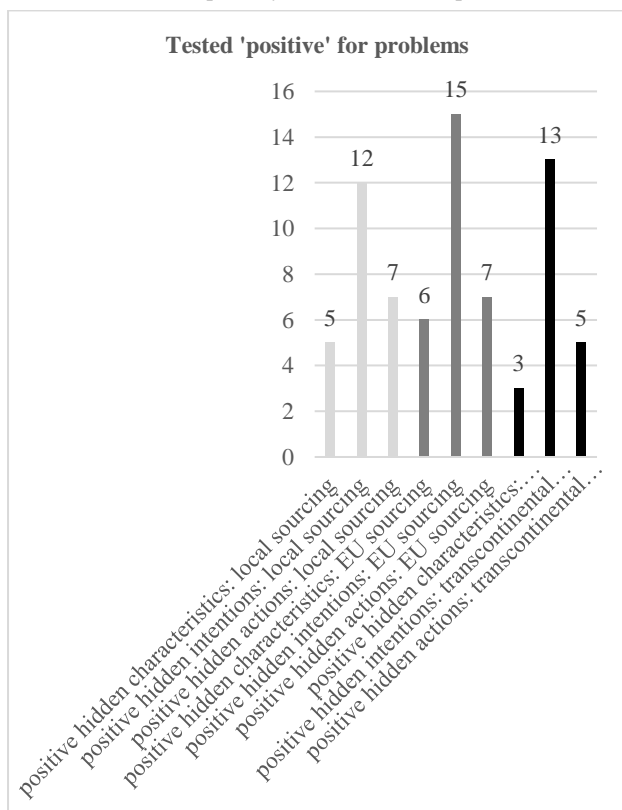


Figure 1: Frequency of companies tested "positive" for PAT problems

The next step, as mentioned before, is to provide the interviewee answers as examples that made the qualification for testing “positive” for a specific problem.

5.2.1.1 Hidden characteristics: limited information, knowledge, transparency before contracting concerning prices, qualities, capabilities, capacities, or other info

The main motivation that companies qualified for the *hidden characteristics* problem were that purchasers did not have all information, knowledge, transparency before contracting. This could refer to the prices, qualities, capacities, capabilities, or other information. For example, Company J1 referring to their local Dutch suppliers stated: “*They’re always transparent in this, however, ‘steered’ transparent. This means that they always try to manipulate you, by showing numbers and graphs in just a different way than they’re supposed to. Suppliers are good at that, they know what they should show you and what could better be left out in order to convince you*”. Company M1 mentioned that with the European suppliers such as Poland, Spain or Italy “*it is more difficult to get a whole set of information*” before contracting and that they operate in a different network compared to their local Dutch suppliers. Reason being that local suppliers share the same regulations thereby knowing the rules. Hence, it is very easy and transparent to work with local suppliers. The same interviewee mentioned that the transcontinental suppliers from the US, China, and Mexico were even more difficult to obtain all information compared to the European ones. Company R4 referring to their transcontinental suppliers in China stated that it is difficult to obtain all information because “*[with] China, [...] it is a really big distance, and you are always talking to those women, you never know what sort of factory is behind all of it. Sometimes they say: ‘we can produce everything’. And then may notice that there is another organization behind than initially thought. And the moment you notice this, it is going to take longer before receiving the samples and it takes longer before getting the right prices*”. Furthermore, s/he confirmed that the transcontinental Chinese suppliers show different prices than the actual ones in the beginning, that it is “*purely negotiation with them*” and that they “*present themselves as if they have this massive factory, but in reality, this is not the case*”.

5.2.1.2 Hidden intentions: Changed behaviour after contracting including reduced qualities, unpunctual delivery, increased prices, and lack of quantity

The main motivation that companies qualified for the *hidden intention* problem were that once the suppliers were contracted that they behaved differently than previously agreed upon. This could refer to a diminished willingness to perform e.g. reduced qualities, increased prices, unpunctual delivery, or reduced capacities/ quantities.

Many companies mentioned that they experienced a lack of quality, which is the first type of changed behavioural problem that will be mentioned. Company R5 referring to their local Dutch suppliers - where this particular problem occurs the most – stated: “*Bad quality never, but there have of course been some lack in quality multiple times*”. Additionally, Company M2 referring to all their suppliers (local, EU, and transcontinental) confirmed that the problem of - reduced qualities with the intention of the supplier getting a higher profit from it - has happened. Company M2 also clarified that the products were not ‘low quality’ because they have a standard request and further adding that they request the supplier to inform them when their key material or production process has been changed and what they added. And further explaining: “*what they do is, OK they*

make the change but they will first make their own judgment because some of them are also very professional, right? [...] The product is identical. We do not notice any difference. If that is the situation, they typically tend to don't tell the customer. Company R4 experienced a lack of quality mostly with their Chinese transcontinental supplier and stated: "sometimes it stays hidden or they mention it is a 'production error'. And it will always remain difficult that you are cooperating with China, all the products we receive are already paid. That is not something we have with Italy and Portugal. With them we can make agreements about credits, limits and repayments terms. And this is not the case with China, all products which arrive at the harbour are paid. This implies when opening the container and there is something wrong, we have a problem".

The second type of changed behavioural problem that was mentioned often was unpunctual delivery, referring to suppliers not delivering the supplies on the agreed delivery times. Company R4 referring to their EU supplier from Italy, mentioned: *"It is difficult to make the agreements with them closed, especially concerning delivery dates. A lot of promises, but they do not live up to them"*. And further adding that the reliability of the Italian supplier *"has not changed, it has always been this bad"*. This was mostly caused by the "more relaxed work ethic" from the Italians as confirmed by Company R4. Additionally, Company N4 mentioned that they experienced with their transcontinental Chinese supplier: *"They often try to give us reasons for delivering late for example with some new regulations from the Chinese government or something. Then, when we want to see that new regulation, they cannot tell us"*. Company N2 had a similar problem with their local German supplier and stated: *"I have the feeling that sometimes they are giving reasons for delivering a day late that simply cannot be true. That means, I sometimes think they are not giving us all information they have"*. Company S2 mentioned: *"the biggest problem this time is the delivery time of the products we bought. They're increasing and most of the time our suppliers can't do anything about it. It's their suppliers who are not on time. That could be because of the shipments"*.

The third type of changed behavioural problem mentioned was increased prices after contracting. However, very few companies experienced this. Company S2 referring to their local Dutch suppliers mentioned: *"Some suppliers want us to be a customer and they have low prices and once you are customer within a year, the prices go up and I don't think it's fair"*. Company R1 mentioned that *"you always encounter obstacles and problems with everyone. This can be about not being able to deliver, lack of quality, price increases"*. Company R3 mentioned: *"Now we get due to political circumstances in the US higher import duties on the aluminium. Recently we encountered a lot of difficulties with this increase of cost related to import. The difficulty with it is, the costs for this are always variable, so it will remain a risk. For the long-term projects, it is also a risk to source in America due to uncertainty in costs. This will decrease your margins on the project. For us it does not matter what the prices are of these products, because we simply have our own set margin on a project. For us it is important the moment we offer our customers a price, this price will remain the same. It is not possible to guarantee this when sourcing in America"*.

The fourth type of changed behavioural problem mentioned was suddenly supplying reduced quantities, though only a few companies experienced this. An example of this is Company S1 who experienced that: *"when there is a shortage in the market, you see that people behave differently. And that's what happening now. E.g. from Spain, we buy a lot of polymers and there is a real shortage now and they are not so helpful as they have been in the past. So there you see a difference. [...] So there*

is not enough material, there are too many customers and we always thought that we were one of their most important customers and now currently we are not because they don't have enough stock".

5.2.1.3 Hidden actions: Limited transparency to monitor or evaluate the performance

The main motivation that companies qualified for the *hidden intention* problem were that the buying firms had limited information, ability or transparency to be able to properly monitor the performance of the supplier. For example, Company S1 mentioned: *"To monitor, that is difficult. You will always have to know the main contra face by phone and by email. Or the only way to keep track of that is to get into touch with them. It's not like that you can get all the information or track your goods or whatever whenever you want to. You always have to get into contact with them. So, you make an agreement, you have like a sales contract. You say we're going to buy this from you and they say well we're going to deliver this date and then they send you like the confirmation and they send you when there are changes. Or when the ship is stuck at the Suez Canal or whatever. And sometimes you have to ask for information, but yeah, it's not like we can all look it up online. That's not the way it goes, no"*. As mentioned before, Company N2 had the feeling that their local German supplier was not being honest about the reason for the delays as they are not the supplier's biggest customer. The supplier said that one of their machines was not running as a result of the delay. However, N2 stated: *"we cannot prove that the machine was not running because it is not possible to monitor all of our orders"*. Company R2 mentioned: *"Companies don't like it that you are able to just walk everywhere and know everything, but there is also a safety aspect involved in this"*. Company R4 mentioned: *"Italy and Portugal are more transparent, as an example, you can easily use google maps or google earth to see what sort of company they are at first glance. It was more easy to check them, you can easily visit these factories. In Italy and Portugal, there are less pitfalls than with China"*. For example, they mentioned that monitoring is more difficult in China because you order, pay and receive the product without certainty of quality and further adding that *"we account only [for] a small percentage of their revenue and they do not really [care] whether we choose to stop the cooperation"*. This company emphasized that from now on they are going to keep *"better track of the delivery times and dates. That is for us the most crucial part, because our computer system depends on such data, for logistics and sales most of all. If we as Company R4 make a promise that we deliver our product to a customer and we cannot deliver due to supplier problems, we receive complaints from our customers"*.

5.3 Analysis RQ 2: Which methods can be used by the buyer to mitigate the opportunistic challenges caused via information asymmetries?

5.3.1 Supplier performance evaluation & monitoring is the most significant phase to mitigate opportunistic behaviour

The second part of the empirical findings revolves around the practices or methods to mitigate the opportunistic activities that come from the information asymmetries between the buyer and the supplier. An overview is presented in Table 2.

Table 2: Pre- and post-contractual methods to mitigate hidden characteristics, hidden intention, and hidden action

Category	Subcategory (phase)	Code description Interview answers (method)
Pre-contractual	Supplier selection (29)	Audits (3); B2B platform (1); financial reviews (2); good reputation (1); KPI (1); market test (2); online checks (3); physical meetings before contract (4); qualification certificates (ISO 9001) (3); reviews where suppliers present themselves (1); tendering platforms (2); tests & checks (3); trade exhibitions (1); checklist & procedures (2)
	Contract negotiations & contracting (19)	negotiation: price, quality, delivery times (4); contracting: confirmation/quotation (2); contracting: contracts (10); contracting: master service agreement (1); contracting: NDA agreement (2)
Post-contractual	Supplier performance evaluation & monitoring (33)	advanced GPS tracking (1); audits (2); benchmarking (1); certificates (3); COA (certificate of analysis) (1); evaluation systems/programs/KPI (8); incoming control process (1); keep in touch via phone/email/online (3); online meetings (1); on-site checks (8); OTD (on-time delivery) (2); reviews (1); vendor rating (1)

To get an overview of which phase or stage is the most emphasized one, Figure 2 shows the relevance of each of the three phases. As depicted, ‘supplier performance evaluation & monitoring’ seems to be the most significant phase for purchasers.

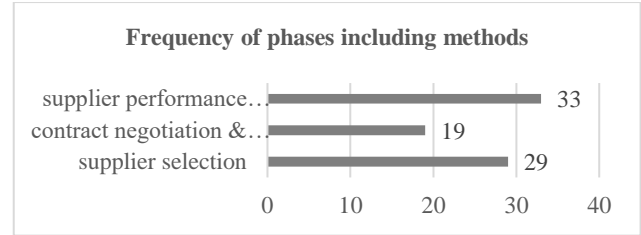


Figure 2: Frequency of phases including methods

In the following sub-subchapters (5.3.1.1 – 5.3.1.3), examples of interviewees’ answers are provided which showcase the different methods for mitigating opportunistic challenges in a certain phase.

5.3.1.1 Supplier selection: Physical meetings before contracting most important activity

The method or activity that was mentioned the most for supplier selection as shown in figure 3 is ‘physical meetings before contracting’ seemed to be the most important activity before selecting a supplier. As Company J2 stated: “If you want to engage in a relationship, it’s very valuable to visit them first. If you don’t visit your supplier, the relationship will be worse. So you always need to make sure that you visit the supplier. It improves the relationship and it also shows some respect from both sides. You show them that they’re worth the visit, and they show us that we’re important enough to welcome us”. The second most important activity included: ‘tests & checks’, ‘qualification certificates’, ‘online checks’, and ‘audits’. An example for ‘test & checks’ was given by Company N5 referring to doing checks on business processes to see whether the suppliers fill their expectations. Company R1 checks for potential suppliers who fit their price and quality standards. Other companies emphasized selecting certified suppliers who were guaranteed qualified for the job. For example, the ISO 9001 certificates were required by companies like M3 and N1, where Company M3 mentioned that this certificate “shows a certain process-oriented mindset in the organization”. Other companies like R4 made sure to have the first glance on the internet about their EU suppliers like Italy and Portugal to see what sort of company they are and be able to visit them, which was easier to do compared to their transcontinental supplier in China. Audits were performed by companies like M3 and N1 in which an independent party is hired to analyse the suppliers’ balance sheets to minimize the risk as stated by N1. Other companies such as S5 and J2 were keen on performing financial reviews on the supplier’s financial stability, where S5 mentioned: “If we source business with them and they go bankrupt or they are insolvent in, five, six months, yeah we cannot work with them. So, we do have reviews”. Market tests were, *inter alia*, also done by Company S5 where they see what options they have for choosing a supplier. Company S5 mentioned: “When we do a market test, when we ask for a price, we advertise this in a platform. So, there are dedicated platforms for transportation on the market. So, it’s in a kind of industry standard”. Thus, market testing is done to see who could offer a better price. Company S3 normally selects their suppliers through trade exhibitions, where different suppliers present themselves and then “look which one is the best one”, taking into account their customer’s requirements, as well as, the price and quality of the product.

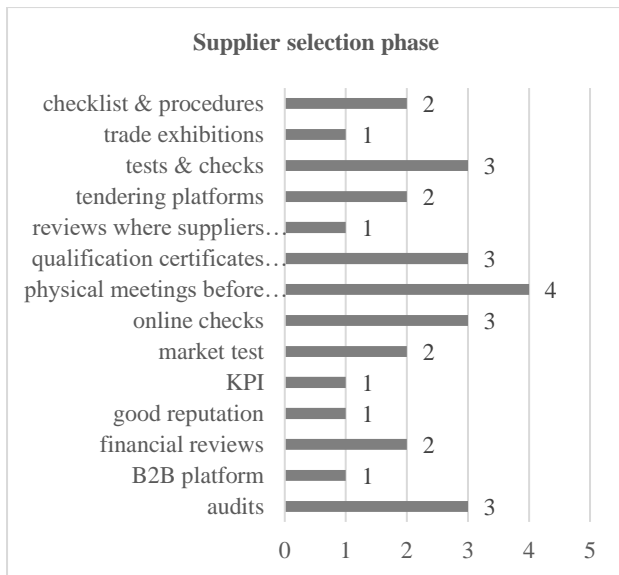


Figure 3: Supplier selection phase and its related methods

5.3.1.2 Contract negotiations & contracting: face-to-face negotiations & contract agreements are the most important methods

Many companies mentioned the importance of contracting. However, first, standard criteria are negotiated such as prices. Negotiations are preferably done face-to-face. For example, Company S3 mentions: “sometimes you have to look your suppliers in the eyes. And because when you want to have your best price, you can better go there. And it's better, also for the customer. That you have a better contract”. “Like you want to have a big project that you want to handle about price or discuss about prices is better to go for face to face”. Company S4 mentions: “if you buy a machine of Euro 100.000, you want to see what you are buying. Then you negotiate with the man, it is difficult to negotiate over the phone. If you are physically present then you start talking, then you get extra discount and things”. After, *inter alia*, the prices, qualities, and delivery terms are negotiated between the buyer and the supplier, both companies have to come to an agreement and make a good “standard” contract with the previously mentioned specifications like price etc. and also the terms and conditions and is the most mentioned method of contracting as shown in Figure 4. However, some companies like R1 and R5 also create Non-Disclosure Agreements (NDA's) where the supplier is not allowed to share any confidential information of the buyer or use any confidential information of the buyer for their own operations. Company S5 creates master service agreements, which were described by the company as “a kind of umbrella contract with the extended liabilities” that “goes beyond the national and international regulations” where suppliers are expected “to pay the full value of the goods when they are damaged or when they are lost” and suppliers have to accept that in order to do business with them.

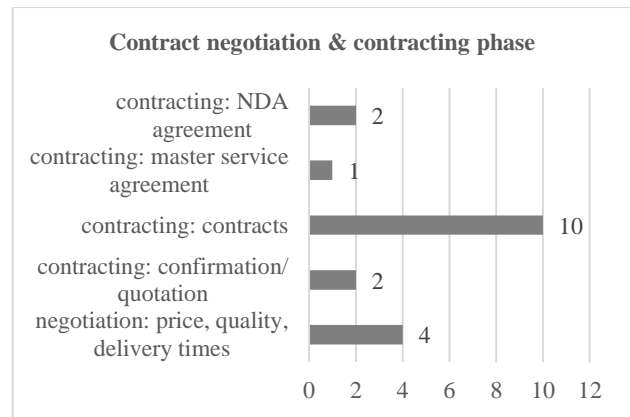


Figure 4: Contract negotiation and contracting phase and its related methods

5.3.1.3 Supplier performance evaluation & monitoring: evaluation systems/programs/ KPI and on-site checks are the most emphasized methods

For the final phase ‘supplier performance and evaluation’, the most important methods/activities mentioned were ‘evaluation systems/programs/ KPI’ as well as ‘on-site checks’ as shown in Figure 5. For the ‘evaluation systems/programs/ KPI’ method, Company R2 mentioned: “We also have a program especially for quarterly reflections of the suppliers. For this program, we make use of variables such as quality, KPI's and more. At the end of this program, a mark will be given to the suppliers. We now have a new program for this, which reports issues or problems, this program also notifies the supplier”. Company S5 uses an advanced GPS tracking system that allows for real-time visibility of the suppliers and is linked to the company's platform, mentioning: “We can see when they arrive at the supplier, when they leave the supplier, where they are during transit and when they arrive at the plant, even what the estimated time of arrival would be at the plant. So if there is any delay, that's highlighted in the platform as well”. Company M2 performs “a regular supply performance evaluation” where s/he states: “For us, quality means something else than just performance. Performance is supply, including business strategy of the commitment, safety, sustainability and security of supply. And that's the four big elements, which are monitored. Other companies such as R1 measure/ evaluate the KPI's at every visit, which takes place every 3 months. Company N4 ensures that they get an insight into their business operations and get all the performance indicators they want. They can check and double-check the quality of the products, but also the business procedures and therefore have not experienced any problem with receiving all the information to be able to monitor the supplier's performance. Many other companies like N5 visit their local supplier on a regular weekly basis and that is when their performance is also measured and monitored. However, with their EU supplier, it is a bit more challenging as they are located further away, but still visits once or twice a year, which is enough as they believe that there is a lot of trust between them. Furthermore, Company R5 performs a so-called ‘vendor rating’, which is a supplier rating that reoccurs each month keeping track of production-related data. It consists of checking multiple variables and all accounting for a certain % in the rating and all variables accumulated will come to 100%. When the supplier is in the range of 90-100%, they are an A-supplier and there are no problems and when the rating goes below 90%, they start with actions and if the rating keeps dropping they eventually stop the relation. Oddly enough, Company R5 mentioned that the suppliers are asking them about their vendor ratings, because

they want to see how well they performed. Other companies evaluate or monitor the suppliers' performance with their certificates, which include standard monitoring procedures and processes. Company J2 stated “we work with certified suppliers. So, we are always looking for specific things from the process. All processes are being covered by the certification which the companies possess. What is then of interest to us? How do they execute checks during their processes? With certified suppliers, it is clear how they handle their processes”. Company M3 uses, for example, the 3.1 B certificate, which is directly focused on the chemical mechanistic characteristics of the product. Company R3 uses the AS91100 certificate for their operations.

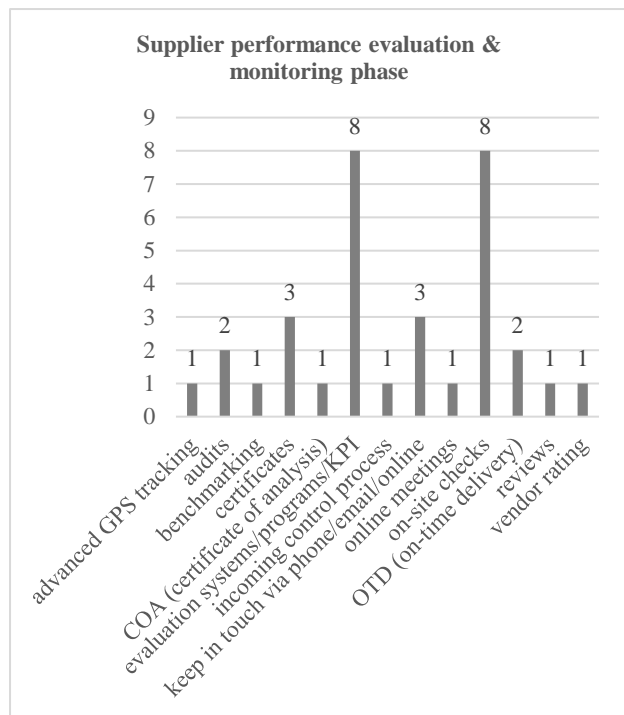


Figure 5: Supplier performance evaluation & monitoring phase and its related methods

6. DISCUSSION

6.1 The application of the PAT to the locational problem

6.1.1 Local suppliers: most transparent before and during the interaction relationship presenting the lowest level of opportunistic risks compared to EU and transcontinental suppliers

Based on the interview findings, a concluding overview of the opportunistic challenges emphasizing the three different locations is provided in table 3 and will be further discussed in subchapters 6.1.1.1 – 6.1.1.3. Table 3 depicts the level of opportunistic behaviour in local, EU and transcontinental sourcing before and during the interaction relationship with the buyer, in which the terms: “low”, “low-medium”, “medium-high” and “high” are used. These terms are not given in general, but they are just an indication of how the 21 companies reacted to the different types of suppliers. Based on the interview answers, it seems that the level of severity or difficulty of opportunistic behavioural activities increased as the geographical distance between the buyer and the supplier increased. The impact of the quote influenced the level of difficulty.

Table 3: Level of opportunistic behaviour in local, EU, and transcontinental sourcing before and during the interaction relationship

	HC: level of transparency before contracting	HI: level of changed behaviour after contracting	HA: level of transparency to monitor performance
Local sourcing	High	Low	High
EU sourcing	Medium	Low-medium	Medium
Transcontinental sourcing	Low	Medium-high	Low

The argumentation on how Table 3 came to be will now be discussed. Please note, these are based on the interview findings, which will be used to indicate the level of opportunistic risks between the three different sourcing locations, but it is not certain that all transcontinental or European suppliers share the same characteristics.

6.1.1.1 Local sourcing in comparison to transcontinental (China) sourcing

The level of transparency before contracting in China is indicated as low. This level was given based on the following quotes: ‘The thing [with China] is you do not communicate with the people producing the product but with the ‘account managers’, which almost always are women in between the 20-30 years, speaking properly English’. ‘If there are hidden characteristics], that is very hard to tell when talking about China, because it is a really big distance, and you are always talking to those women. So, you never know what sort of factory is behind all of it. Sometimes they say: “we can produce everything”, and then may notice that there is another organization behind then initially thought. And the moment you notice this it is going to take longer before receiving the samples and it takes longer before getting the right prices’. ‘Chinese companies present themselves as if they have this massive factory, but in reality, this is not the case’ (R4).

The level of changed behaviour after contracting in China is indicated as medium-high. This level was given based on the following quotes: ‘We have had a lot of problems with the Chinese companies, because there was a lot of rubbish in the pigment and then it gave us really big problems, so that is why we chose to work together with European suppliers’ (S1). ‘Sourcing from a local supplier is comparing to China sourcing much easier and this is mostly due to a lack in delivery time as well as a lack in quality, which are the biggest problems likely to occur in this relationship’ (R2). ‘China used to be really cheap in the past and then u would say like: we know that the quality is maybe a bit less and really have to check all the raw materials again once they arrive by ship, but now they are not cheaper than when we buy from Europe’. ‘You cannot have a business when you cannot ensure that quality is good, we always need to send good quality to our customer’ (S1). ‘Bad quality never, but there has been of course some lack in quality multiple times’ (R5). ‘Sometimes the lack in quality stays hidden or they mention it is a ‘production error’ (R4). ‘With China, it is always you never know when you are going to get it, if the price is correct, if the goods are ok, if the packaging is ok’ (S1). ‘We now see how vulnerable we as a company would have been if we had solely focused on the Chinese supplier. Cause at the moment the

delivery times are too irregular also due to the situation in the Suez-canal, but in the past, there had been other problems (too few return containers is given as an example) with shipping with makes delivery time too irregular. These problems are not possible with a supplier within Europe'. 'Well, what definitely is location related is the difference in uncertainty' (R5). 'A reason for not ordering transcontinental are the massive delivery times' (R2). 'The supplier that was most likely to lack in quality was China' (R4).

The level of transparency to monitor performance in China is indicated as low. This level was given based on the following quotes: 'To monitor [China] is very difficult, you will always have to know the main contra face by phone number and by email. The only way to keep track of that is to get in touch with them. It is not like that you can get all the information or track your goods or whatever whenever you want to. You always have to get into contact with them. So, you make an agreement, you have like a sales contract. You say we are going to buy this from you and they say well we are going to deliver this date and then they send you like the confirmation and then they send you when there are changes. Or when the ship is stuck at the Suez-canal or whatever. And sometimes you have to ask for information, but it is not like we can all look it up online'. 'With China, it is always you never know when you are going to get it, if the price is correct, if the goods are ok, if the packaging is ok. So, they are not so open as it is in Europe' (S1). 'A source in China has significantly more control lost' (R5).

The application of PAT in connection with the impact of the above-mentioned quotes leads to the conclusion that sourcing from China is a bigger disadvantage nowadays. It would make the local buyer who is solely focusing on China, very vulnerable, due mostly to the massive delivery time. Because of the uncertainty in delivery times as well as a lack in monitoring the delivery, sourcing closer to their production factory, in the future will be taken more into consideration. As for the lack of quality, they also will consider if it is still profitable and therefore preferable to source from China taking mostly these difficulties in delivery time into consideration.

6.1.1.2 Local sourcing in comparison to transcontinental (USA) sourcing

The level of transparency before contracting in the US is indicated as low. This level was given based on the following quotes: 'In the case with the American supplier, it is convenient that it is such a big player within the market. So, we know exactly with whom we are doing business with, but the communication therefore is more difficult because in this case we are a small player and order at a giant'. 'We chose the Dutch supplier next to the American supplier, because communication is easier (with the Dutch)'. 'With the American supplier we are currently working on using their database. This so we can see the current stock, prices and more. This will make our communication more efficient, especially taking the downside of the time difference into account'. 'With the Dutch supplier we do not have a shared platform, we communicate via mail or by calling. As soon as we contact them, they will reply quickly and the next day we will receive the product' (R3). 'Here in the Netherlands and Germany it is easy for us to go by car if you go to America, then you lose your time, transportation is very important. It takes months to ship a machine to Suriname. But if you buy something here in the Netherlands or in Germany, we have it delivered in Rotterdam and within ten days it is in Suriname. Here we know exactly what we are doing, we know exactly who we can follow. If the boat slows down here, they also report us, but Americans are different'. 'Yes, I physically go the supplier here in the Netherlands, because if the machine cost Euro 100.000, - you

want to see what you are buying. If you are physically present then you start talking, then you get extra discount and things.' 'with other suppliers within the EU, it's the same, if we buy a machine we also go there, then we also go to negotiate'. 'Look when we take on work, there are consultants and sometimes you have a consultant of American things. Then that person wants you to buy a lot of American things, otherwise they will reject you' (S4).

The level of changed behaviour after contracting in the US is indicated as medium-high. This level was given based on the following quotes: 'Now we get due to political circumstances in the US higher import duties on the aluminium. Recently we encountered a lot of difficulties with this increase of cost related to import. The difficulty with it is, the costs for this are always variable, so it will remain a risk. For the long-term projects, it is also a risk to source in America due to uncertainty in costs. This will decrease your margins on the project. For us it does not matter what the prices are of these products, because we simply have our own set margin on a project. For us it is important the moment we offer our customers a price, this price will remain the same. It is not possible to guarantee this when sourcing in America'. 'Having a short delivery time (when sourcing from the Netherlands) can be sometimes very convenient'. 'Until this day I have not encountered any problems with them (the Dutch)'. 'They (American supplier) almost always produced and delivered steady, sporadically, they did not, but that is due to production error, so it is negligible'. 'If a solid European alternative enters the market we will most likely switch from sourcing in the USA to a European supplier, the overview of costs is much clearer, also European parties often deliver DDP (delivery on door) and this is not possible for the American supplier unless they open a European department' (R3).

The level of transparency to monitor performance in the US is indicated as low. This level was given based on the following quotes: 'We are allowed to visit the American supplier, but we do not visit them. And the Dutch supplier we do visit'. 'We only visit the Dutch supplier. It is not worthwhile to visit the American supplier. Unless there is a quality problem, then we visit all our suppliers and talk with the audit, which will result in a report on what improvements should be made'. 'We test the OTD (On Time Delivery), we test the amount of quality issues. 96% of the orders should be delivered on time, 98% should be according to the quality standard. And if that is not the case, we will visit them (the suppliers), but in the case of the American supplier we will most likely search for alternative instead of going there'. 'With the American supplier, we are currently working on using their database. This so we can see the current stock, prices and more. This will make communication more efficient, especially taking the downside of the time difference into account. With the Dutch we do not share a platform, we communicate via mail or by calling. As soon as we contact them, they will reply quickly and the next day we will receive our product'. 'Because of the time difference and according to the American culture (it is normal to start at 09.00 and not at 07.00), the time cap for communication is very small' (R3).

The application of PAT in connection with the impact of the above-mentioned quotes leads to the conclusion that sourcing from the US is not preferable, the moment a solid European alternative will enter the market these local suppliers will most likely switch, because of the extra costs due to increase in import duties, which results in different prices for the customer and the lack of not being able to deliver DDP. Out of these suppliers the ones that are easiest doing business with (related to location and a different time zone), will be chosen. Having a good delivery and a good relationship is also important.

6.1.1.3 Local sourcing in comparison to sourcing from other countries within the EU

The level of transparency before contracting in the EU is indicated as medium. This level was given based on the following quotes: *'Surely, we have the feeling the Dutch supplier is holding back information, they will not tell me everything immediately. This is part of the first phase of a relationship, as the relationship gets better will become more willing to share information'. 'Within the EU everybody is able to communicate in English or in this case in German' (R2). 'With the Dutch supplier it is normally, you share the same under the same regulation, so you know the rules. It is very easy to work with these companies basically, you get the information, it is more transparent working with these companies. With the European level for difficulties to get the complete transparency is a little bit more difficult. With European suppliers, if they are in other countries like Poland, Spain or Italy it is more difficult to get a whole set of information and also it is a different network you work with.' 'I think here (the Netherlands) the companies work more in a similar way and similar culture and also similar system' (M1). 'The culture in Romania is really different, they are really introvert were on the opposite the Dutch people are more extrovert. It takes time with them to figure out whether they really understand it. In Lithuania and Romania, we can still sense the presence of communism, this results that in relation to production they have or get plan, they execute this plan and that's it. So it takes time to clarify how we want our product' (R1). 'Typical the German supplier in general, especially the bigger ones, they do not really tell you all the things. The Dutch supplier depends. They also will hide some but they also will tell you some. The Germans, they always need to get some internal proof to get something disclosed' (M2).*

The level of changed behaviour after contracting in the EU is indicated as low-medium. This level was given based on the following quotes: *'Until this day we have not witnessed any changed behaviour (with a German supplier)'. 'Every supplier sometimes has production errors' (R2). 'There is also a lot of difference in quality standards, between us and the suppliers. If according to quality there is a lack, in the Netherlands we think in a way of 'not good send it back, they must make sure to deliver a proper product. But if we react in such a way multiple towards our suppliers, they will react in a way such as: 'they cannot help it, and otherwise they will not make a profit on the product. Which eventually results in them stopping the relationship. So, to prevent that from happening we go by again and discuss with them how to properly do it'. 'Well you can encounter obstacles and problems with everyone. This can be about not being able to deliver, lack of quality, price increases' (R1). 'I think this (reduced the quality without telling me because they try to get a higher profit) happened with all of them' (M2). 'Italy is known for a more relaxed work ethic. It is difficult to make the agreements with them closed, especially concerning delivery. A lot of promises but they do not live up to them. On the other hand, the Portuguese supplier is very strict to their agreements. You can rely on them but not on the Italians. Compared to China, Italy and Portugal are more transparent, for example, you can easily use google maps or google earth to see what sort of company they are at first glance. You can easily check them, you can easily visit these factories' (R4). 'With especially the supplier from Italy we had a lack of qualities problems. We had sometimes the problem that they deliver goods what we did not confirm, so, when it was here, we got a problem with that. Sometimes you send it back or you have to do something about it' (S3).*

The level of transparency to monitor performance in the EU is indicated as medium. This level was given based on the

following quotes: *'If the supplier is in the Netherlands, we can meet very easily, for Germany it is the same. We can easily travel to Germany or they travel over' (M2). 'In Germany) I was allowed to see the production of all basic products, but the special products which we use a lot we were not able to see due to chemical reasons. Many big companies special laid out routes for visitors where they are allowed to walk. Companies don't like it that you are able to just walk everywhere and know everything, but there is also a safety aspect involved in this'. 'At our Dutch supplier we can see everything, but then again they don't produce products' (R2). 'Unfortunately we have a limited system to monitor our suppliers (in Germany and Austria)'. 'We also have a program specially for quarterly reflections of the suppliers' (R2). 'We do not monitor the Dutch, it's more in the time and this is the same with the European Union suppliers'. 'Sometimes you have questions about the delivery and then you ask them, so you are always in contact with them'. 'We occasionally check on them'. 'Maybe with countries like Hungary or Czechia the monitoring is more difficult, but normally Germany, Belgium and Holland are not so much problem'. 'Sometimes you have to monitor countries like Hungary and Slovakia, you have to monitor more to make no failures in the delivering' (S3). 'We do not really monitor the performance of our suppliers' (N3). 'We visit the German supplier every week and that is when the performance of them is also measured and monitored, with the Italian supplier, it is a bit more difficult, because they are more far away' (N5).*

The application of PAT in connection with the impact of the above-mentioned quotes leads to the conclusion that sourcing from the EU in comparison to local sourcing is still preferable. Local suppliers (the Dutch) are in comparison to other suppliers within the EU more transparent and share their information. With other suppliers in the EU, it is a bit more difficult to get a whole set of information and also it is a different network you work with. In the Netherlands the companies work in a more similar way, culture and system. However, with the Germans, one can expect basically a good quality etc. and of course due to a production error sometimes there is also a lack in quality. Difficulties are more likely to occur in other countries within the EU, for example, Italy and Portugal, but these difficulties are more cultured related, for example, it is more difficult with Italy to make an agreement closed.

6.2 PAT assumptions from literature confirmed by interviews

In regards to RQ1, empirical evidence for three types of information asymmetries presented different opportunistic challenges. For hidden characteristics, Company R4 referring to the Chinese suppliers mentioned: *'The thing [with China] is you do not communicate with the people producing the product but with the 'account managers', which almost always are women in between the 20-30 years, speaking properly English'. '[if there are hidden characteristics], that is very hard to tell when talking about China, because it is a really big distance, and you are always talking to those women. So, you never know what sort of factory is behind all of it. Sometimes they say: "we can produce everything.", and then may notice that there is another organization behind then initially thought. And the moment you notice this it is going to take longer before receiving the samples and it takes longer before getting the right prices'. 'Chinese companies present themselves as if they have this massive factory, but in reality, this is not the case' (R4).* This statement example is supported by literature. For example, Fayezi et al. (2012, p. 557) and Shapiro (2005, p. 263) mention that the problem of hidden characteristics activities is identified when the agents exaggerate their capabilities and capacities or hide their weaknesses from the principal pre-contractually to present a

better display of themselves. These misrepresentations are only identified during the interaction relationship.

For hidden intentions, the most significant results found for changed behaviour concerned lack in quality and unpunctual delivery. Company S1 mentioned: *'We have had a lot of problems with the Chinese companies, because there was a lot of rubbish in the pigment and then it gave us really big problems, so that is why we chose to work together with European suppliers'* (S1). Company R2 mentioned that *'Sourcing from a local supplier is comparing to China sourcing much easier and this is mostly due to a lack in delivery time as well as a lack in quality, which are the biggest problems likely to occur in this relationship'*. Company R4 mentioned that *'the supplier that was most likely to lack in quality was China'* (R4). All these statements are supported by literature. For example, Steinle et al. (2014, p. 124) mentioned the problem of suppliers' changed behaviour after contracting and provided examples of opportunistic behavioural activities such as quality deficits and unpunctual delivery. Especially with transcontinental sourcing, Kotabe and Murray (2018, p. 372) argued that external suppliers may behave opportunistically since their incentive structure significantly differs compared to the buying firm. And further stating that opportunistic behaviour allows a supplier to extract more rents from the buyer than usual e.g. "by supplying a lower than agreed-upon product quality or withholding information on changes in production costs".

For hidden action, Company S1 mentioned that they do not have all the information/transparency to monitor their suppliers and thus cannot easily monitor the performance, mentioning: *"To monitor, that is difficult. [...] It's not like that you can get all the information or track your goods or whatever whenever you want to. You always have to get into contact with them. [...] And sometimes you have to ask for information, but yeah, it's not like we can all look it up online. That's not the way it goes, no"*. This statement is also supported by literature where Steinle et al. (2014, p. 127; Rauchhaus (2009, p. 872); Meffert et al. (2018) and Pavlou et al. (2007, p. 110) refer to hidden actions when the principal is unable to monitor, evaluate, or observe the agent's behaviour or performance including their activities and effort levels.

In regards to RQ2, empirical evidence for the importance in pre- and post-contractual mitigation methods of opportunistic behaviour has been provided through the interviews. The findings from the interviews before contracting emphasized the 'supplier selection' and 'contract negotiations & contracting' phase with related methods, whereas the findings from the interviews after contracting emphasized the 'supplier performance evaluation & monitoring' phase with related methods. Supplier performance evaluation & monitoring as the most significant phase with related methods such as monitoring the KPIs (e.g. the quality of the supplies) is supported by literature.

The methods to reduce opportunistic behaviour provided in the findings are mostly referring to the pre-contractual screening and post-contractual monitoring methods. These are supported by for example, Steinle et al. (2014, p. 124); Shevchenko et al. (2020, pp. 315-316; Kaplan and Stromberg (2001, p. 429); and Rauchhaus (2009, p. 881).

Bayo-Moriones et al. (2011, p. 257) mentioned that supplier selection and monitoring methods can be for example checking the quality standards of the supplier with certificates such as ISO 9001. Company M3 and N1 for example, use this method where N1 states: *"Every customer has to register on our platform and show a form about their ISO quality which is standard for our products. And company R5 adding that it is to see: "whether the*

supplier is capable for the production (qualification certificate). A couple of companies mentioned the importance of monitoring and evaluating the supplier performance as it can ensure or improve reliable and high-quality supply, which is supported by Rauchhaus (2009, p. 880) and Nair et al. (2015, p. 6272).

7. CONCLUSION

7.1 Summary of key findings

This research provided a literature review on three different sourcing strategies, where the rise in differentiating global sourcing into transcontinental and continental sourcing is emphasized as a recently emerging topic and contrasted against local sourcing. The PAT is operationalized in a practical setting, where empirical evidence for different types of opportunistic challenges, which are a significant factor affecting the buyer-supplier relationship, are provided as well as the methods for mitigating these challenges. Both the opportunistic challenges and mitigation methods of such were confirmed by literature. There are differences in the level of risks of hidden characteristics, hidden intentions, and hidden actions between the three sourcing locations.

In the end, it is safe to say that the local buyer without experiencing any major problems, can still source from the Netherlands and the EU, although sourcing exclusively from the Netherlands appears to be easier than sourcing from the EU, and this is mostly based on the difference in transparency, quality, location, and language. Within the EU, everybody is able to communicate in English and transport can easily be managed. With transport from outside the EU, there are a lot more obstacles needed to be taken into account such as customs and clearance.

Doing business with China, which by most of the companies is indicated as their biggest transcontinental supplier, has in comparison to local and EU sourcing the most and the biggest difficulties to overcome. While in the past most companies were focused on China as their transcontinental supplier, it is noticed that many of these companies are now considering switching to EU sourcing. This is because the disadvantages and the advantages in sourcing from China are taken more into consideration. While in the past sourcing from China had a lot of advantages, such as low costs due to low loan level, nowadays there have been more uncertainties, for example, the Suez-canal case, that has shown us that the buyer can be vulnerable, if he depends too much on Chinese suppliers. Companies are now taking more into consideration to source closer to their companies. The uncertainties are related to the question of whether the costs involved with sourcing from China are worth sourcing in China, so, whether this relationship is still profitable and therefore preferable. Sourcing in China has definitely more control lost. Until now companies had always witnessed that cost advantage was worth sourcing in China, but this advantage has reduced significantly. It is however still attractive to source in China, but this is becoming less and less. If that is the case the distance between the EU and China is an important disadvantage. If the buyer considers transporting via plane, because of transport delay, these costs are for the buyer. Another disadvantage of sourcing in China is that there is a big difference in work standards, for example, sustainability is becoming more and more important for the buyer and its customers, but not for the Chinese supplier. The problem with this is that sustainability and low costs can be very contradicting. Lower cost can be accomplished via sourcing in China, but this will result in lower sustainability. This is a very contradicting and difficult demand from the customer. Eventually, the buyer has to choose a long-term solution. And the long-term sustainability, will because of this, become more important, which will result in less sourcing in China.

Doing business with the US has given the following insights: although it is technically not impossible to have a transparent view at the beginning of the relationship as well as the monitoring phase of these suppliers, most companies do not consider such because of the time, the effort and cost in doing so. Due to political circumstances in the US, the costs of imports are variable and because of this, the buyer cannot guarantee the customer that the price will remain the same. In the EU, the overview of costs is much clearer. The EU suppliers also often deliver DDP (delivery on door) and this is not possible for the American supplier, unless they open a European department.

In the end, it can be concluded that for sourcing from both transcontinental suppliers, China and the US that the moment a solid alternative supplier will enter the market, companies will most likely switch from sourcing from China as well as sourcing from the US to a European supplier, but as long as this is not the case local buyers will still source from these transatlantic suppliers, therefore it can be argued that this relationship is still 'safe'.

7.2 Recommendations for companies engaging in transcontinental sourcing

Companies should emphasize more on environmentally sustainable aspects in the future such as diving deeper into the impacts and mitigation measures of reducing the carbon footprint. Thus, emphasizing the Corporate Social Responsibilities (CSR) like environmental-friendlier products, mitigation of pollution, full circularity including proper recycling and disposal. Thus, also considering the lifecycle analysis/assessment (LCA).

In terms of the sourcing location, for the Chinese supplier, it is recommended that unless they want to stay interesting for the Netherlands and the EU, they have to take actions regarding their transparency in the contracting phase by keeping their buyers up to date of all the facts the buyer should know before they close the contract, such as the real price, quality and quantity as well as the delivery time. It is a fact that sometimes they are not responsible for the delay in delivery, but in this case, because of the payments already done by the buyer, they should take a bigger responsibility if there are extra costs involved (when contracting another supplier in short term). To keep up with global changes it is also recommended that these suppliers should take long-term sustainability into account.

7.3 Managerial implications

The research results were discussed by showcasing different types of opportunism through hidden characteristics, hidden intentions and hidden actions. Hidden characteristics were identified when the buyer had limited information/knowledge/transparency before contracting about the supplier or the characteristics of their products/services. Hidden intentions were identified when the buyer experienced the supplier behaving differently than agreed upon post-contractually. Hidden actions were identified when the buyer did not have all the transparency to monitor the supplier's performance.

Reflecting on the aim to test the PAT assumptions concerning the different types of opportunistic behaviour in buyer-supplier relationships and compare how it differs from the three types of sourcing, the empirically-based "level of opportunistic behaviour in local, EU, and transcontinental sourcing before and during the interaction relationship" table might be considered as a contribution of this paper.

The research provides some practical implications for purchasers based on the findings from the interviews. When selecting the supplier, it is important to visit and meet suppliers face-to-face

first. This proved to have many advantages such as better information gathering about the supplier and the products/services they offer. It also allows for better negotiations. And it creates a start for a good mutual relationship.

Furthermore, most companies create standard contracts entailing specifications such as price and delivery terms. However, it is recommended to also add additional terms and conditions including liabilities and return policies, for example, in the occurrence of poor delivery.

Additionally, monitoring the performance of the suppliers should not be underestimated as it is critical to keep an eye on suppliers to maintain consistent and high-quality supply. If applicable, there could be a database where all KPIs can be analysed and assessed.

To avoid information asymmetry at the beginning, it is best if suppliers present their information on an "enrolment" platform where the buyer can access all necessary information about the supplier, including financial data and certificates (e.g. ISO 9000) to ensure certain quality standards.

To avoid information asymmetry during the interaction relationship, it is also recommended to have another database or system that keeps up all the necessary data to monitor the performance of the supplier. This would allow for transparency especially in the logistics (and sales) department.

7.4 Limitations & theoretical implications

This research has some limitations that should be acknowledged. There is usually a degree of biases in interviews. The manner the interviewer asks questions to the interviewee might have an impact on the replies. Additionally, it depends on how the interviewee interprets and answers the question. The research can also be affected by how the interviewer interprets the results of the interviews. Another limitation is due to the semi-structured interview approach that the interviewees were allowed to give any open answers to the questions asked, as expected, however, this leads to the interviewer not being able to go into detail about every aspect that they mentioned due to time restrictions. Additionally, this paper was restricted by the number of PAT questions and not all questions have been asked by the interviewer or not all questions have been answered by the interviewee upon reviewing the transcriptions. The interview had only three main questions on the PAT theory itself and concerned "yes-no" questions, to which different follow-questions came along, mostly depending on the responses that were given by the interviewees.

This paper had a relatively broad scope in the sense that there were no restrictions on specific countries, other than buying firms being preferably from the Netherlands and sourcing locally, within the EU, and across continents. An important aspect to keep in mind here is that not all interviewed purchasers had suppliers in each of the three sourcing locations. Most of them had local and EU suppliers. A smaller number of companies had transcontinental suppliers and even fewer had suppliers in all three locations. Hence, the frequencies of the result findings served more as an indicator to see which type of information asymmetric problem showed the most results for the different types of opportunistic behaviours, affecting the buyer-supplier relationship and not making assumptions where these problems occur the most but rather focusing on the degree of severity of the opportunistic problem when comparing the three different locations with each other. Furthermore, differences within the EU countries and differences within the transcontinental countries can also be seen. Therefore, it cannot be generalizable that all local, or all EU, or all transcontinental suppliers share the same characteristics.

With regards to the methods for preventing information asymmetric challenges by contracting and monitoring, not all companies mentioned, for example, the pre-contractual processes of supplier selection and contracting even though it is to be assumed that a contract has been made prior to the start of the relation. The monitoring methods are all different depending on the company as they vary according to the industry they are in, the size of the company, and the type of products or services they procure. Therefore, the results of the monitoring methods should only be seen as a certain purchaser's preferred choice of monitoring.

Nevertheless, from a theoretical standpoint, this paper contributes to research by first providing a new layer of insights into the rise on the topic of differentiating global sourcing into transcontinental and continental sourcing. And comparing those two sourcing strategies along with local sourcing. Subsequently, empirical evidence is provided showing that the PAT can be operationalized in buyer-supplier relationships, where the assumptions of different types of opportunistic behaviour and different information asymmetries are supported by literature and confirmed by interviews, as well as, the methods for avoiding or mitigating these challenges. The findings of this study showcase that in supplier selection and supplier performance evaluation procedures, opportunistic behaviour via information asymmetries must be taken into account. This research encourages future related researchers to emphasize the opportunistic behavioural challenges via three different information asymmetries further that buyers face when engaging in local, continental and transcontinental sourcing as very limited research is done where all three different information asymmetries are operationalized in a practical setting. Another interesting study would be to research the agency problems by also taking into account the supplier's (agent's) perspective. In this research, only the buyer's (principal's) perspective and insights in the buyer-supplier relationship are provided, which produces a one-sided point-of-view. It might be that the buyers (principals) also act opportunistically and hence may also affect the buyer-supplier relationship.

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9. REFERENCES

Alsaawi, A. (2014). A critical review of qualitative interviews. *European Journal of Business and Social Sciences*, 3(4), 149–156. doi:<http://dx.doi.org/10.2139/ssrn.2819536>

Ashby, A. (2016). From global to local: reshoring for sustainability. *Operations Management Research*, 9(3–4), 75–88. <https://doi.org/10.1007/s12063-016-0117-9>

Bayo-Moriones, A., Bello-Pintado, A., & Merino-Diaz-de-Cerio, J. (2011). Quality assurance practices in the global supply chain: the effect of supplier localisation. *International Journal of Production Research*, 49(1), 255–268.

Bohnenkamp, T., Schiele, H., & Visser, M. D. (2020). Replacing global sourcing with deep localisation: the role of social capital in building local supply chains. *International Journal of Procurement Management*, 13(1), 83. <https://doi.org/10.1504/ijpm.2020.105200>

Ceric, A. (2014). The impact of project managers' experience on the selection of strategies for minimizing information asymmetries in construction projects. *Engineering Project*

Organization Journal, 4(1), 44–57. <https://doi.org/10.1080/21573727.2014.886563>

Cho, J., & Kang, J. (2001). Benefits and challenges of global sourcing: perceptions of US apparel retail firms. *International Marketing Review*, 18(5), 542–561. <https://doi.org/10.1108/eum000000006045>

Christopher, M., & Peck, H. (2004). Building the Resilient Supply Chain. *The International Journal of Logistics Management*, 15(2), 1–14. <https://doi.org/10.1108/09574090410700275>

Christopher, M., Peck, H., & Towill, D. (2006). A taxonomy for selecting global supply chain strategies. *The International Journal of Logistics Management*, 17(2), 277–287. <https://doi.org/10.1108/09574090610689998>

Ciliberti, F., de Haan, J., de Groot, G., & Pontrandolfo, P. (2011). CSR codes and the principal-agent problem in supply chains: four case studies. *Journal of Cleaner Production*, 19(8), 885–894. <https://doi.org/10.1016/j.jclepro.2010.09.005>

Cohen, M. A., Cui, S., Ernst, R., Huchzermeier, A., Kouvelis, P., Lee, H. L., . . . Tsay, A. A. (2018). OM Forum—Benchmarking Global Production Sourcing Decisions: Where and Why Firms Offshore and Reshore. *Manufacturing & Service Operations Management*, 20(3), 389–402. <https://doi.org/10.1287/msom.2017.0666>

Corinna Cagliano, A., De Marco, A., Rafele, C., & Arese, M. (2012). A decision-making approach for investigating the potential effects of near sourcing on supply chain. *Strategic Outsourcing: An International Journal*, 5(2), 100–120. <https://doi.org/10.1108/17538291211257574>

Dachs, B., Kinkel, S., Jäger, A., & Palčič, I. (2019). Backshoring of production activities in European manufacturing. *Journal of Purchasing and Supply Management*, 25(3). doi:10.1016/j.pursup.2019.02.003

Dankbaar, B. (2007). Global Sourcing and Innovation: The Consequences of Losing both Organizational and Geographical Proximity. *European Planning Studies*, 15(2), 271–288. <https://doi.org/10.1080/09654310601078812>

de Boer, L., Labro, E., & Morlacchi, P. (2001). A review of methods supporting supplier selection. *European Journal of Purchasing & Supply Management*, 7(2), 75–89. [https://doi.org/10.1016/s0969-7012\(00\)00028-9](https://doi.org/10.1016/s0969-7012(00)00028-9)

DeJonckheere, M., & Vaughn, L. M. (2019). Semistructured interviewing in primary care research: a balance of relationship and rigour. *Family Medicine and Community Health*, 7(2), e000057. <https://doi.org/10.1136/fmch-2018-000057>

Delbufalo, E. (2018). Agency Theory and Sustainability in Global Supply Chain. In *Agency Theory and Sustainability in the Global Supply Chain* (pp. 33–54 doi:10.1007/978-3-319-72793-6_3. Cham: Springer International Publishing.

Di Mauro, C., Fratocchi, L., Orzes, G., & Sartor, M. (2018). Offshoring and backshoring: A multiple case study analysis. *Journal of Purchasing and Supply Management*, 24(2), 108–134. doi:10.1016/j.pursup.2017.07.003

Duan, Y., Hofer, C., & Aloysius, J. A. (2020). Consumers care and firms should too: On the benefits of disclosing supplier monitoring activities. *Journal of Operations Management*, 67(3), 360–381. <https://doi.org/10.1002/joom.1129>

Eisenhardt, K. M. (1989). Agency Theory: An Assessment and Review. *Academy of Management Review*, 14(1), 57–74. <https://doi.org/10.5465/amr.1989.4279003>

- Fayezi, S., O'Loughlin, A., & Zutshi, A. (2012). Agency theory and supply chain management: A structured literature review. *Supply Chain Management*, 17(5), 556-570. doi:10.1108/13598541211258618
- Fratocchi, L., Ancarani, A., Barbieri, P., Di Mauro, C., Nassimbeni, G., Sartor, M., . . . Zanoni, A. (2016). Motivations of manufacturing reshoring: an interpretative framework. *International Journal of Physical Distribution and Logistics Management*, 46(2), 98-127. doi:10.1108/IJPDLM-06-2014-0131
- Golini, R., & Kalchschmidt, M. (2011). Moderating the impact of global sourcing on inventories through supply chain management. *International Journal of Production Economics*, 133(1), 86-94. https://doi.org/10.1016/j.ijpe.2010.06.011
- Holweg, M., Reichhart, A., & Hong, E. (2011). On risk and cost in global sourcing. *International Journal of Production Economics*, 131(1), 333-341. <https://doi.org/10.1016/j.ijpe.2010.04.003>
- Hüttinger, L., Schiele, H., & Veldman, J. (2012). The drivers of customer attractiveness, supplier satisfaction and preferred customer status: A literature review. *Industrial Marketing Management*, 41(8), 1194-1205. https://doi.org/10.1016/j.indmarman.2012.10.004
- Ivanov, D., Tsipoulanidis, A., & Schönberger, J. (2019). *Global Supply Chain and Operations Management* (2nd ed.). New York, USA: Springer Publishing. <https://doi.org/10.1007/978-3-319-94313-8>
- Jap, S. D., & Anderson, E. (2003). Safeguarding Interorganizational Performance and Continuity Under Ex Post Opportunism. *SSRN Electronic Journal*, 49(12), 1684-1701. Published. <https://doi.org/10.2139/ssrn.423040>
- Johansson, M., & Olhager, J. (2017). Manufacturing relocation through offshoring and backshoring: the case of Sweden. *Journal of Manufacturing Technology Management*, 29(4), 637-657. <https://doi.org/10.1108/jmtm-01-2017-0006>
- Kang, M., Wu, X., & Hong, P. (2009). Strategic outsourcing practices of multi-national corporations (MNCs) in China. *Strategic Outsourcing: An International Journal*, 2(3), 240-256. https://doi.org/10.1108/17538290911005153
- Kaplan, S. N., & Stromberg, P. (2001). Venture capitals as principals: contracting, screening, and monitoring. *American Economic Review*, 91(2), 426-430.
- Kedziora, D., Karri, T., Kraslawski, A., & Halasa, M. (2017). Nearshore Service Transfers in the EU: Legal and Economic Issues. *Economics & Sociology*, 10(1), 290-309. <https://doi.org/10.14254/2071-789x.2017/10-1/21>
- Kinkel, S. (2012). Trends in production relocation and backshoring activities: Changing patterns in the course of the global economic crisis. *International Journal of Operations and Production Management*, 32(6), 696-720. doi:10.1108/01443571211230934
- Körber, T., & Schiele, H. (2020). Purchasing with a high share of remote suppliers: Challenges and explanatory power of relevant theories. Enschede, Netherlands.
- Kotabe, Masaaki & Murray, Janet. (2018). Global Sourcing Strategy: An Evolution in Global Production and Sourcing Rationalization, 365-384. https://doi.org/10.1007/978-3-319-61385-7_15
- Larsen, M. M. (2016). Failing to estimate the costs of offshoring: A study on process performance. *International Business Review*, 25(1), 307-318. doi:10.1016/j.ibusrev.2015.05.008
- Lewin, A. Y., & Peeters, C. (2006). Offshoring Work: Business Hype or the Onset of Fundamental Transformation? *Long Range Planning*, 39(3), 221-239. <https://doi.org/10.1016/j.lrp.2006.07.009>
- MacCarthy, B., & Atthirawong, W. (2003). Factors affecting location decisions in international operations – a Delphi study. *International Journal of Operations & Production Management*, 23(7), 794-818. https://doi.org/10.1108/01443570310481568
- Maestrini, V., Luzzini, D., Caniato, F., & Ronchi, S. (2018). Effects of monitoring and incentives on supplier performance: An agency theory perspective. *International Journal of Production Economics*, 203, 322-332. <https://doi.org/10.1016/j.ijpe.2018.07.008>
- Meffert, H., Bruhn, M., & Hadwich, K. (2018). Konzepte und theoretische Grundlagen des Dienstleistungsmarketing. *Dienstleistungsmarketing*, 43-90. https://doi.org/10.1007/978-3-658-19176-4_2
- Meixell, M. J., & Gargeya, V. B. (2005). Global supply chain design: A literature review and critique. *Transportation Research Part E: Logistics and Transportation Review*, 41(6), 531-550. https://doi.org/10.1016/j.tre.2005.06.003
- Mohammed, A., Harris, I., & Govindan, K. (2019). A hybrid MCDM-FMOO approach for sustainable supplier selection and order allocation. *International Journal of Production Economics*, 217, 171-184. https://doi.org/10.1016/j.ijpe.2019.02.003
- Muris, T. J. (1981). Opportunistic Behavior and the Law of Contract. *Minnesota Law Review*, 2443. <https://scholarship.law.umn.edu/mlr/2443>
- Nair, A., Jayaram, J., & Das, A. (2015). Strategic purchasing participation, supplier selection, supplier evaluation and purchasing performance. *International Journal of Production Research*, 53(20), 6263-6278. doi:10.1080/00207543.2015.1047983
- Najafi, N., Dubois, A., & Hulthén, K. (2013). Opportunism or strategic opportunity seeking? Three approaches to emerging country sourcing. *Journal of Purchasing and Supply Management*, 19(1), 49-57. <https://doi.org/10.1016/j.pursup.2012.12.002>
- Nassimbeni, G., & Sartor, M. (2007). Sourcing in China: a typology. *International Journal of Production Economics*, 107(2), 333-349. https://doi.org/10.1016/j.ijpe.2006.09.011
- Pagell, M., & Shevchenko, A. (2014). Why Research in Sustainable Supply Chain Management Should Have no Future. *Journal of Supply Chain Management*, 50(1), 44-55. https://doi.org/10.1111/jscm.12037
- Patil, A. A., & Kumthekar M. B. (2016). Supplier Evaluation and selection methods in construction industry. *International Research Journal of Engineering and Technology (IRJET)*, 3(6), 515-521. <https://www.irjet.net/archives/V3/i6/IRJET-V3i696.pdf>
- Pavlou, Liang, & Xue. (2007). Understanding and Mitigating Uncertainty in Online Exchange Relationships: A Principal-Agent Perspective. *MIS Quarterly*, 31(1), 105. https://doi.org/10.2307/25148783
- Picot, A., Reichwald, R., & Wigand, R. T. (2008). *Information, Organization and Management* (2008th ed.). Berlin, Germany: Springer-Verlag Berlin Heidelberg.
- Queirós, A., Faria, D., & Almeida, F. (2017). STRENGTHS AND LIMITATIONS OF QUALITATIVE AND QUANTITATIVE RESEARCH METHODS. *European Journal of Education Studies*, 3(9). <http://doi.org/10.5281/zenodo.887089>

- Quintens, L., Pauwels, P., & Matthyssens, P. (2006). Global purchasing: State of the art and research directions. *Journal of Purchasing and Supply Management*, 12(4), 170–181. <https://doi.org/10.1016/j.pursup.2006.10.006>
- Rauchhaus, R. W. (2009). Principal-Agent Problems in Humanitarian Intervention: Moral Hazards, Adverse Selection, and the Commitment Dilemma. *International Studies Quarterly*, 53(4), 871–884. <https://doi.org/10.1111/j.1468-2478.2009.00560.x>
- Rungtusanatham, M., Rabinovich, E., Ashenbaum, B., & Wallin, C. (2007). VENDOR-OWNED INVENTORY MANAGEMENT ARRANGEMENTS IN RETAIL: AN AGENCY THEORY PERSPECTIVE. *Journal of Business Logistics*, 28(1), 111–135. <https://doi.org/10.1002/j.2158-1592.2007.tb00234.x>
- Schiele, H., & Körber, T. (2021). Is Covid-19 a turning point stopping global sourcing? Differentiating between declining continental and increasing transcontinental sourcing. Enschede, Netherlands.
- Schiele, H., Hoffmann, P., & Korber, T. (2021). Synchronicity Management: Mitigating Supply Chain Risks by Systematically Taking Demand Changes as Starting Point—A Lesson From the COVID-19 Crisis. *IEEE Engineering Management Review*, 49(1), 55–62. <https://doi.org/10.1109/emr.2020.3040016>
- Schmidt C. (2016). Theoretische Grundlagen. In: Steigerung der Objektivität Interner Revisoren. AutoUni – Schriftenreihe, vol 91. Springer, Wiesbaden. https://doi.org/10.1007/978-3-658-15236-9_2
- Shafiq, A., Johnson, P. F., Klassen, R. D., & Awaysheh, A. (2017). Exploring the implications of supply risk on sustainability performance. *International Journal of Operations & Production Management*, 37(10), 1386–1407. <https://doi.org/10.1108/ijopm-01-2016-0029>
- Shankman, N. A. (1999). Reframing the Debate between Agency and Stakeholder Theories of the Firm. *Journal of Business Ethics*, 19(4), 319–334. doi:<https://doi.org/10.1023/A:1005880031427>
- Shapiro, S. P. (2005). Agency Theory. *Annual Review of Sociology*, 31(1), 263–284. doi:10.1146/annurev.soc.31.041304.122159
- Shevchenko, A., Pagell, M., Lévesque, M., & Johnston, D. (2020). Preventing supplier non-conformance: extending the agency theory perspective. *International Journal of Operations & Production Management*, 40(3), 315–340. <https://doi.org/10.1108/ijopm-08-2019-0601>
- Sodhi, M. S., & Tang, C. S. (2019). Research Opportunities in Supply Chain Transparency. *Production and Operations Management*, 28(12), 2946–2959. <https://doi.org/10.1111/poms.13115>
- Steinle, C., & Schiele, H. (2008). Limits to global sourcing?: Strategic consequences of dependency on international suppliers: Cluster theory, resource-based view and case studies *Journal of Purchasing and Supply Management*, 14(1), 3–14. <https://doi.org/10.1016/j.pursup.2008.01.001>
- Steinle, C., Schiele, H., & Ernst, T. (2014). Information Asymmetries as Antecedents of Opportunism in Buyer-Supplier Relationships: Testing Principal-Agent Theory. *Journal of Business-to-Business Marketing*, 21(2), 123–140. <https://doi.org/10.1080/1051712x.2014.903457>
- Theurl, T. (2010). *Operative cooperation management 5.1 Principal-agent theory Agenda 5.2 Property rights*. Retrieved from website: [http://www.wiwi.uni-](http://www.wiwi.uni-muenster.de/06/studieren/lehrveranstaltungen/2010/material/eb-c-chapter5-pt1-100119.pdf)
- muenster.de/06/studieren/lehrveranstaltungen/2010/material/eb-c-chapter5-pt1-100119.pdf
- Trent, R. J., & Monczka, R. M. (2003). Understanding integrated global sourcing. *International Journal of Physical Distribution & Logistics Management*, 33(7), 607–629. <https://doi.org/10.1108/09600030310499286>
- von Haartman, R., & Bengtsson, L. (2015). The impact of global purchasing and supplier integration on product innovation. *International Journal of Operations & Production Management*, 35(9), 1295–1311. <https://doi.org/10.1108/ijopm-03-2015-0128>
- Vos, F. G., Scheffler, P., Schiele, H., & Horn, P. (2016). “Does global sourcing pay-off? A competitive dynamics perspective.” *Journal of Purchasing and Supply Management*, 22(4), 338–350. <https://doi.org/10.1016/j.pursup.2016.07.002>
- Wan, L., Orzes, G., Sartor, M., Di Mauro, C., & Nassimbeni, G. (2019). Entry modes in reshoring strategies: An empirical analysis. *Journal of Purchasing and Supply Management*, 25(3), 100522. <https://doi.org/10.1016/j.pursup.2018.11.002>
- Williamson, O. E. (1979). Transaction-Cost Economics: The Governance of Contractual Relations. *The Journal of Law and Economics*, 22(2), 233–261. <https://doi.org/10.1086/466942>
- Wittstruck, D., & Teuteberg, F. (2012). Understanding the Success Factors of Sustainable Supply Chain Management: Empirical Evidence from the Electronics and Electronics Industry. *Corporate Social Responsibility and Environmental Management*, 19(3), 141–158. <https://doi.org/10.1002/csr.261>
- Wouters, M., van Jarwaarde, E., & Groen, B. (2007). Supplier development and cost management in Southeast Asia—Results from a field study. *Journal of Purchasing and Supply Management*, 13(4), 228–244. <https://doi.org/10.1016/j.pursup.2007.07.002>
- Yeniyurt, S., Henke, J. W., & Cavusgil, E. (2013). Integrating global and local procurement for superior supplier working relations. *International Business Review*, 22(2), 351–362. <https://doi.org/10.1016/j.ibusrev.2012.06.004>
- Zijm et al. (eds.), *Operations, Logistics and Supply Chain Management*, Lecture Notes in Logistics, https://doi.org/10.1007/978-3-319-92447-2_4
- Zu, X., & Kaynak, H. (2012). An agency theory perspective on supply chain quality management. *International Journal of Operations & Production Management*, 32(4), 423–446. <https://doi.org/10.1108/01443571211223086>

10. APPENDICES

10.1 Appendix A – Tables

Table 1: Information asymmetry – recreated & translated based on Meffert et al. (2018)

	Hidden characteristics	Hidden intentions	Hidden action
Info asymmetry	Better market and product knowledge of the agents	Intentions of the agents only after contracting detectable	Principal unable to monitor or evaluate the agent's activities and effort
Danger for principal	Adverse selection	Hold up	Moral hazard
Importance	Inadequate quality characteristics	Diminished agent's willingness to perform	Inadequate performance creation
Origin time	Before the interaction relationship	During the interaction relationship	During the interaction relationship

Table 2: Causes and solutions for the PAT - recreated based on Rauchhaus (2009, p. 881)

	Root cause	Potential solutions
<i>Adverse selection</i>	Asymmetric info before contracting Uncertainty derives from lack of info concerning the agent's preferences over outcomes	Better contract design including premiums, deductibles, and co-payments Escape clauses which nullify security guarantees in case of fraud Improved pre-contract screening Punishing agents for bad outcomes Rewarding agents for good outcomes
<i>Moral hazard</i>	Asymmetric info during contracting period Uncertainty derives from inability to monitor agent's actions	Better contract design including premiums, deductibles, and co-payments Improved monitoring capabilities Punishing agents for bad outcomes Rewarding agents for good outcomes

*Table 3 shows the different categories of location-based challenges by grouping the three different types of information imbalances. The last (third) column shows the description of why the companies were marked 'positive' for a specific type of problem per location. The numbers in the last column are the number of companies that provided support for the problem. The numbers in the first and second column provide the total frequencies.

***Table 3: Overview of challenges that can occur when sourcing at home, within the EU, and across continents**

Category	Subcategory	Code Description
Information asymmetry (IA) per location	IA: type of opportunistic activity	Type of identified opportunistic behavioural activity
Local sourcing information asymmetries (25)	Local HC: Limited information before contracting (5)	Limited info/ knowledge/ transparency before contracting concerning price, quality, capability, capacity, or other info (5)
	Local HI: Changed behaviour after contracting (in terms of performance) (13)	Lack of quality (6); Increased prices after contracting (1); Unpunctual delivery (5); lack of quantity (shortages) (1);
	Local HA: Limited transparency to monitor the performance (7)	Limited ability to monitor the performance (only via phone/email or only allowing limited transparency into operations) (7)
EU sourcing information asymmetries (35)	EU HC: Limited information before contracting (6)	Limited info/ knowledge concerning price, quality, capability, capacity, or other info (6)
	EU HI: Changed behaviour after contracting (in terms of performance) (22)	lack of quality (8); increased prices after contracting (4); unpunctual delivery (7); lack of quantity (shortages) (3);
	EU HA: Limited transparency to monitor the performance (7)	Limited ability to monitor the performance (only via phone/email or only allowing limited transparency into operations) (7)
Trans-continental sourcing information asymmetries (23)	Trans HC: Limited information before contracting (3);	Limited info/ knowledge concerning price, quality, capability, capacity, or other info (3)
	Trans HI: Changed behaviour after contracting (in terms of performance) (15)	lack of quality (8); increased prices after contracting (2); unpunctual delivery (5);
	Trans HA: Limited transparency to monitor the performance (5)	Limited ability to monitor the performance (only via phone/email or only allowing limited transparency into operations) (5)

10.2 Appendix B – Figures

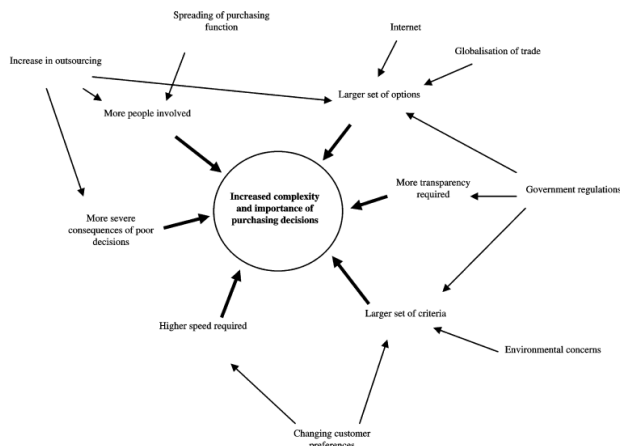


Figure 1: Impact of developments on the complexity of initial purchasing decisions - Original figure from De Boer, 2001, p. 76

	Hidden Characteristics	Hidden Actions	Hidden Intentions
Informations-asymmetrie	Bessere Markt- und Produktkenntnis des Agenten	Aktivitäten des Agenten, die der Prinzipal nicht erkennen kann	Absichten des Agenten, die erst nach Vertragsabschluss feststellbar sind
Entstehungszeitpunkt	Vor der Interaktionsbeziehung	Während der Interaktionsbeziehung	Während der Interaktionsbeziehung
Gefahr für den Prinzipal	Adverse Selection	Moral Hazard	Hold Up
Bedeutung	Mangelhafte Qualitätseigenschaften	Mangelhafte Leistungserstellung	Verminderter Leistungswille des Personals

Figure 2: Information asymmetry – Original figure from Meffert et al., 2018

Information asymmetry	Hidden characteristics		Hidden action		Hidden intention
Differentiation criteria					
Information problem of the principal	Qualitative characteristics of the performance of the contractual partner are not known		Efforts of contractual partner not known, not observable, no basis for judgment		Intentions of contractual partner are unknown
Cause of problem or essential influencing factors	Concealment of characteristics		Monitoring possibilities and costs		Resource dependency
Behavioral leeway of agent	Prior to the signing of contract		After the signing of contract		After the signing of contract
Problem	Adverse selection		Moral hazard		Hold up
Type of problem-solving	Removal of information asymmetry by:	Interest assimilation	Interest assimilation	Reduction of information asymmetry (monitoring)	Interest assimilation
	Signaling/ screening	Self selection			

Figure 3: Overview of PAT - Original figure from Picot et al., 2008, p. 50

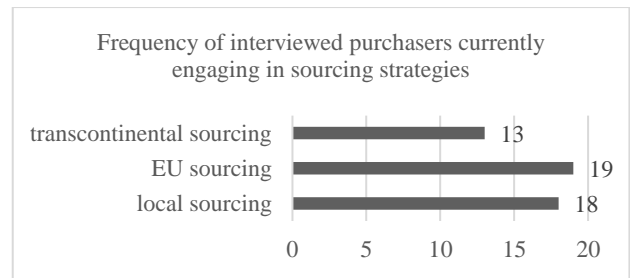
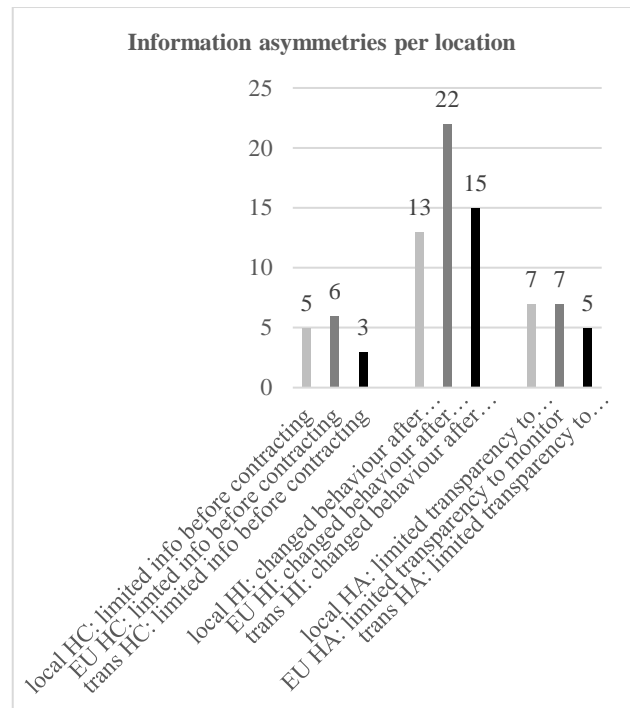


Figure 4: Frequency of interviewed purchasers currently engaging in sourcing strategies



****Figure 5: Frequency of information asymmetries per location**

****For 'hidden intentions', a more detailed distinction is made when referring to 'changed behaviour after contracting'. This is because more companies provided exclusive examples for this type of problem. The four main ones (example of types of opportunistic activities) identified for changed behaviour are: 1) lack of quality; 2) unpunctual delivery; 3) increased prices after contracting; and 4) lack of quantity. Figure 5 now counts the frequencies of these four different changed behavioural examples for hidden intention compared to Figure 1 provided in chapter 5.2.1. The frequencies for the specific problems can be found in Appendix A - table 3.**

10.3 Appendix C – interview questions

Topic	Main questions	Sub questions
Introduction	Disregarding a special case, which differences do you see between suppliers located at home / in another EU country / on another continent? (relationship, delivery, ease of doing business with, treatment, legal aspects, contracting, liabilities, handling taxes...)	
	Briefly describe the supplier and its product(s).	Location, products/ services?
	Why did you choose this supplier?	Cost reasons? Technology? Location?
	How attractive are you for the supplier?	Would you say that you are the preferred customer? Do you have a lot of competitors?
Social capital	How was your collaboration structured ? (structural capital: shared IT systems, joint meetings, regular calls, etc.)	How did the relationship/structure change over time?
	Within this relationship, did you encounter problems (cognitive capital: language/culture/religion)	Cultural barriers? Overlap of objectives, do you share the same goals as your supplier?
	How did the relationship develop over time? (relational capital)	Have you ever been wanting to switch? Is there a team member feeling?
Principal-agent	Did you get all the information you needed when selecting this supplier? (hidden characteristics, before starting the relation)	How much do you know about the industry they are in? recent innovations they were part of? Their level of transparency?
	During the interaction , did you have the feeling that the supplier was behaving differently than promised? (hidden intentions)	Was there ever a lack of quality? How much information do you think they give compared to the total amount they have on a subject? Are they open with their data etc? Poor quality, increased prices after contracting, unpunctual delivery?
	Could you get all the information / transparency to be able to monitor the performance of the supplier? (hidden action)	How are you monitoring them? To what level do they allow you to see their operations?
Closing	Giving this experience, do you have an impression that it has to do with the supplier being local/European/transcontinental, and what lessons do you take out of this?	
	Would you have an explanation for the phenomenon of relative loss of importance of suppliers in the EU?	If you think this is not the case, would you rather have an explanation for the phenomenon of relative increase of importance of suppliers in the EU?

10.4 Appendix D – Company overview

Company name	Industry	Products/services	Buyer's home country
S1	(Road) Construction	Colouring pigments/additives and rejuvenating additives	The Netherlands
S2	Electrical, Plumbing & Hardware Wholesalers	Heavy machinery and parts	The Netherlands
S3	(Concrete) Construction	Concrete mixers	The Netherlands
S4	Electrical, Plumbing & Hardware Wholesalers	Heavy machinery and parts	The Netherlands
S5	Automotive	Logistic services (JIT deliveries, rail or road services)	Germany
R1	Agriculture	Mixers (Mengbak)	The Netherlands
R2	Manufacturing	Plastic sheet metals	The Netherlands
R3	Aerospace manufacturing	Raw aluminium and mounting materials e.g. blind rivet nuts	The Netherlands
R4	Interior wholesaler	Table cloth and curtains	The Netherlands
R5	Hydraulic machines	Tube' used for a hydraulic system	The Netherlands
M1	Vegetarian food production	Raw materials to produce enzymes	The Netherlands
M2	Engineering plastics	Chemicals	The Netherlands
M3	Processing chips	Titanium	The Netherlands
M4	Food production	Liquid fertilizers	The Netherlands
N1	Trailer production	Wood	Germany
N2	Bed linen production	Printing bed linen	Germany
N3	Shop fitting	Aluminium profiles for furniture construction	Germany
N4	Furniture for ships and hotels	Electronic circuits for furniture	Germany
N5	Suction systems	*no answer provided	Germany
J1	Food - supermarket	Cheese, dairy products, Italian desserts, bananas	The Netherlands
J2	Pipelines	Rubber rings	The Netherlands