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Investment decision-making in international B2B projects

A case study on key drivers of customer decision-making in B2B project sales in the mining industry

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ABSTRACT:
Tässä tutkimuksessa tarkastellaan investointipäätöksiin vaikuttavia tekijöitä suurissa B2B-projekteissa kansainvälisessä kaivos- ja mineraaliteollisuudessa. Tietyt mineraalit ovat kriittisiä vihreän energiasiirtymän kannalta, sillä ilman niitä siirtymää ei voida toteuttaa. Esimerkiksi tuulivoimaturbiinien, aurinkopaneelien ja sähköautojen valmistus edellyttää useiden mineraalien hyödyntämistä. Kansainvälisen energiajärjestön (IEA) mukaan Pariisin ilmastosopimuksen tavoitteiden saavuttaminen vuoteen 2040 mennessä, eli ilmaston lämpenemisen pitäminen selvästi alle kahdessa asteessa, edellyttää kriittisten raaka-aineiden tarpeen nelinkertaistumista nykyiseen saatavuuteen verrattuna. Tutkimuksen kohteena oleva suomalainen monikansallinen pörssiyritys valmistaa tuotteita ja palveluita mineraalien arvoketjun kaikissa vaiheissa. Investoinnit sen ratkaisuihin ovat merkittäviä paitsi yrityksen liiketoiminnan kannalta myös yhteiskunnallisesti, sillä kriittisten mineraalien saatavuuden turvaaminen on edellytys vihreälle siirtymälle ja ilmastonmuutoksen hillitsemiselle.

Tutkimus toteutettiin tapaustutkimuksena suomalaisessa pörssiyrityksessä, joka toimii globaalisti kaivos- ja mineraalialan projektimyynnissä. Tutkimus sovelsi monimenetelmällistä lähestymistapaa. Kvantitatiivinen aineisto koostui yrityksen sisäisestä tilausdatasta vuosilta 2020–2024, jota analysoitiin suhteessa makrotaloudellisiin muuttujin, kuten raaka-aineiden hintoihin, valuuttakursseihin ja korkotasoihin. Kvalitatiivinen aineisto koostui 18 puolistrukturoidusta haastattelusta, joissa selvitettiin yrityksen edustajien ja asiakkaiden näkemyksiä investointipäätöksistä.

Tulosten perusteella asiakkaiden päätöksentekoa selittävät sekä ulkoiset että sisäiset tekijät. Makrotaloudelliset indikaattorit, kuten metallien hinnat ja valuuttakurssit, heijastuvat projektimyyntiin, mutta eivät yksin selitä investointien ajoitusta. Haastattelujen perusteella korostuvat erityisesti luottamus, kommunikaatio, riskienhallinta sekä asiakkaiden aiemmat kokemukset toimittajasta. Näin ollen investointiprosessia voidaan ymmärtää parhaiten yhdistämällä taloudelliset tekijät ja organisatoriset näkökulmat.

Johtopäätöksenä projektimyynti edellyttää sekä taloudellisen ympäristön seurantaa että pitkäjänteisiä asiakassuhteita. Käytännön tasolla yrityksen tulisi kehittää myyntistrategioitaan siten, että se pystyy tunnistamaan asiakkaiden riskipainotuksia ja vahvistamaan luottamusta haastavissakin markkinaolosuhteissa. Tutkimus tuottaa myös tieteellistä lisäarvoa osoittamalla, että monimenetelmällinen lähestymistapa tarjoaa syvällisemmän ymmärryksen suurten B2B-projektien päätöksenteosta.

KEYWORDS: B2B project sales, Customer decision-making, Mining industry, Macroeconomic indicators, Risk management in large projects, Trust in business relationships

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1 Introduction

1.1 Background and motivation

To reach the Paris Agreement's goal of keeping global warming below 2°C by 2040, the required amount of critical raw materials is four times higher than the amount of minerals currently accessible (The International Energy Agency (IEA), 2022). For example, electric vehicles require six times the amount of minerals as combustion engine cars, and onshore wind plants require nine times the amount of minerals needed for gas-fired power plants (IEA, 2022). The European Commission published a report in 2020 that provides an outlook for mineral demand in 2030 and 2050. According to the 2050 outlook, lithium demand is expected to be 60 times greater, cobalt 15 times greater, and rare earths 10 times greater (European Commission, 2020). Access to minerals is not only necessary for sustainable development but also for social well-being (Nieć et al., 2014).

Critical minerals are crucial when economies are transitioning towards sustainability, decarbonization, and renewable energy sources (Moisoiu, 2022). Access to critical minerals is limited, and their use is experiencing a significant escalation, with geopolitical uncertainties negatively affecting their supply (Nate et al., 2021). The problem is not that the materials are not geologically available, but rather that many other factors hinder access, including protectionist tendencies such as resource nationalism, geopolitics, and trade wars (Petavratzi & Gunn, 2023).

The rapid transition to green energy substantially increases the demand for minerals (The International Energy Agency (IEA), 2022). According to Umbach (2018), the transition to renewable energies will create new geopolitical dependencies, vulnerabilities, and risks. This is because technologies such as batteries, robotics, AI, and other advanced applications rely on an uninterrupted and consistent supply of critical materials (Umbach, 2018). According to Pitron et al. (2019), the dependency on rare

earth materials and its geopolitical consequences are even more severe and significant than those experienced with oil dependencies in the past.

According to Petavratzi and Gunn (2023), the growing demand for critical minerals cannot be met only by using existing capacity; both mining operations and downstream processes, such as smelting and refining, need to be expanded. Increasing supply in the minerals sector is slow and capital-intensive (Petavratzi & Gunn, 2023). From early exploration to a fully operating mine, projects typically progress over several decades, and mine development alone often takes around a decade, depending on factors such as project size, location, access to finance, and the political and economic stability of the host country (Petavratzi & Gunn, 2023). New mines usually require investments of hundreds of millions of dollars, and refineries also involve long lead times before they start operating (Petavratzi & Gunn, 2023). In practice, most projects face delays, which makes it difficult to quickly respond to growing demand (Petavratzi & Gunn, 2023).

Planning a successful project in the mining industry is not easy; it requires careful preparation and coordination (Renaud & Kumral, 2020). The timing of a large-scale mining project is crucial due to the cyclicality of the mining industry, as the cost of delays can be detrimental if the high price cycle of minerals is missed (Renaud & Kumral, 2020). The outcome of a mining project can be affected by political instability, volatile commodity prices, and market conditions (Renaud & Kumral, 2020). Given the escalating demand for these critical minerals and their importance for a greener, more sustainable future, it is crucial not to delay deciding whether to invest in mining and refining projects for these minerals.

1.2 Research gap and aims

Investment decision-making in large industrial projects is a complex process influenced by both internal and external factors. In the mining and minerals sector, large project investments are susceptible to macroeconomic conditions, commodity price fluctuations, and geopolitical uncertainty. While these external dynamics are well-

documented, less attention has been paid to how organizational and relational factors, such as trust, communication, and collaboration, influence investment decisions in large business-to-business (B2B) project sales.

Research on project management has consistently highlighted governance, stakeholder engagement, communication, and risk management as essential factors for project success in complex industrial settings (Carvalho, Patah & de Souza Bido, 2015; Joslin & Müller, 2016; Missonier & Loufrani-Fedida, 2014). Studies in B2B relationship management emphasize trust, commitment, and relational governance as key drivers of long-term partnerships (Brown, Crosno & Tong, 2019; Morgan & Hunt, 1994). However, these perspectives are often examined separately, and little is known about how relational and managerial factors interact with external economic conditions in large investment decisions.

Previous studies have focused mainly on either an economic or an organizational perspective. Economic perspectives have been studied, for example, by Grozdić (2023), who studied the profitability in investment decisions, and Shao and Sorourkhah (2024), who focused on macroeconomic changes and uncertainty in investment decision models. Organizational perspectives have been studied before, for example, by Abuhantash et al. (2018), who focused on organizational buying behavior, and Inoni et al. (2023), who reviewed how internal and external factors jointly shape firm purchasing behavior. Still, there is a limited understanding of how market signals and firm-level decision-making processes jointly shape investment behavior in large industrial projects. This thesis addresses this gap by combining quantitative analysis of macroeconomic indicators with qualitative insights from industry stakeholders to develop a more comprehensive understanding of investment decision-making.

This thesis aims to study the factors influencing investment decisions in large B2B projects in the mining sector, using a Finnish multinational as a case study and employing both quantitative (sales data analysis) and qualitative (interviews) methods. The study

examines the macroeconomic impacts, organizational dynamics, and the significance of trust and relationships in project sales.

1.3 Research problem and research questions

The demand for critical minerals is growing rapidly due to the global transition toward renewable energy and electrification. However, despite the increased demand for mining and refining projects, large investment decisions remain complex, lengthy, and uncertain. Delays in investment decisions can lead to missed high-price cycles, and insufficient investment may lead to supply shortages and increased geopolitical tensions. There is a limited understanding of how different factors jointly influence investment decision-making in large B2B projects, particularly within the mining and mineral sector. This sector is particularly relevant due to the long project timelines, volatile commodity markets, and high capital requirements that increase the complexity of decision-making.

Numerous studies focus either on economic aspects or on organizational behaviour, while this study addresses the research gap. This thesis investigates the factors that shape investment behavior in large B2B projects by combining both quantitative and qualitative methods, focusing on how external economic indicators and internal relational dynamics influence the investment decision-making process.

The thesis is guided by the following research questions:

1. How do macroeconomic indicators influence order intake in large B2B projects?
2. What factors drive customer decision-making in large industrial project investments?

To answer these research questions, a case study approach is employed. The selected case company is a Finnish multinational operating in over fifty countries, with a focus on large-scale project sales within the mining and minerals industry. The case study approach allows for an in-depth examination of investment decision-making in its real organizational context.

1.4 Structure of the thesis

This thesis is structured into three main parts: a literature review, a quantitative analysis, and a qualitative study, and this thesis has six chapters. The first chapter introduces the background and motivation for the study, research gap, and aims, outlines the research problem and questions, and presents the thesis structure.

The second chapter provides a comprehensive literature review, establishing the academic foundation for the research. It reviews prior studies relevant to the key themes of this thesis, including international project management, B2B customer relationships, risk management, and decision-making processes. The theoretical framework addresses factors that influence customer relationships in B2B project environments. The third chapter describes the research methodology, explaining the reasons for adopting a case study approach. It outlines the data collection methods and provides an overview of the research design for both the quantitative and qualitative studies. The fourth chapter presents the quantitative data analysis of sales order data from two business lines. The analysis includes a correlation study with different macroeconomic factors, followed by a correlation matrix, a linear regression analysis, and a multivariate regression analysis. This chapter answers the first research question: *How do macroeconomic indicators influence order intake in large B2B projects?*.

The fifth chapter presents the findings of the qualitative study, which is based on interviews conducted with internal and external stakeholders. It provides insights into which factors are considered important in B2B sales of large projects. The qualitative section investigates the second research question through interviews: *What factors drive customer decision-making in large industrial project investments?*. Finally, the sixth chapter concludes the thesis by summarizing the main findings from both the quantitative and qualitative studies. Theoretical and managerial implications follow it. The final chapter acknowledges the study's limitations and offers recommendations for future research.

2 Literature review on international project management

This section includes a literature review focusing on international project management, trust in B2B relationships, risk management, and decision-making in large international projects. In today's globalized world, international projects are becoming increasingly common, involving diverse, multicultural teams and advanced digital technologies (Anglani et al., 2023). Over the past 20 years, globalization and the recent pandemic have transformed international business, increasing the number of international projects and underscoring the need for new organizational and individual skills to ensure their success (Anglani et al., 2023). "A project can be considered to be the achievement of a specific objective, which involves a series of activities and tasks that consume resources." (Munns & Bjeirmi, 1996, p. 81). A project must have a beginning and an end (Munns & Bjeirmi, 1996). From an organizational theory perspective, a project can be analysed as a temporary organization (Turner & Müller, 2003). An organization's strategic objectives are often achieved, either directly or indirectly, through projects (Project Management Institute, 2013). According to Morris and Hugh (1986), the success of a project depends on having a realistic and definite goal, competition, client satisfaction, profitability, market availability, and other factors. International projects have higher levels of complexity and uncertainty, which highlights the importance of competent project management and clear communication (Müller & Turner, 2007).

According to Baccarini (1996), since World War II, construction projects have become increasingly complex, and he argues that a deeper understanding of project complexity and its effective management is required. Baccarini (1996) argues that complexity is one of the dimensions of a project, such as technology, which is also a dimension of a project. Baccarini (1996) defines complexity as being measured by differentiation and interdependencies. Mining construction projects are highly complex, involving numerous activities that are interdependent (Renaud & Kumral, 2020). Project management is an effective tool for managing complex projects (Munns & Bjeirmi, 1996). Therefore, effective project management is crucial for the success of projects. Projects

require faster decision-making than what is typically needed in an organization, and making the right decisions is crucial for the company's success (Munns & Bjeirmi, 1996).

2.1 Project management: success factors and strategic alignment

“Project management can be defined as the process of controlling the achievement of the project objectives. Utilising the existing organisational structures and resources, it seeks to manage the project by applying a collection of tools and techniques, without adversely disturbing the routine operation of the company” (Munns & Bjeirmi, 1996, p. 81). Project management encompasses defining work requirements, allocating resources, planning execution, monitoring progress, and adjusting the plan (Munns & Bjeirmi, 1996). On-time delivery, staying within budget, and meeting standards are all crucial in project management (Munns & Bjeirmi, 1996). Project goals are typically measured by return on investment (ROI), profitability, competitiveness, and market potential (Munns & Bjeirmi, 1996).

Munns & Bjeirmi (1996) argue that the success of a project and project management are not necessarily linked; a project can be a success even if project management has failed, for example, in completing on time, within budget, or meeting the long-term objectives. Vice versa, project management can be perceived as successful although the project has failed (Munns & Bjeirmi, 1996). Opposing that theory, Avots, Duncan, and Gorsha argue that project management is a key contributor to a successful project. According to Avots (1969), project failures could be avoided with more careful planning. Duncan & Gorsha (1983) identified three key areas why projects fail: under-costing, overspending, and finishing late, and with better project management, these issues could be overcome. De Wit (1988) argued that even good project management can not always save a failing project, but it can contribute positively to a successful one.

Delays in large mine construction projects are common because mines are often located in remote areas, which makes procurement, logistics, and labour availability more challenging to access, and the geological conditions are complex (Renaud & Kumral,

2020). Additionally, interdependent activities make project planning difficult (Renaud & Kumral, 2020). Managers in the mining industry face significant challenges in mine construction projects due to the strict time constraints and price fluctuations of the mineral industry (Renaud & Kumral, 2020). Prices in the mineral industry fluctuate in cycles, changing between periods of high (booms) and low (busts) prices (Marañon & Kumral, 2019). For example, the price of copper was $4.50 per pound in 2011, and five years later, in 2016, it had dropped to $ 2 per pound (Renaud & Kumral, 2020). It takes two to six years to construct a mine; missing high-price cycles can result in substantial market and financial losses (Renaud & Kumral, 2020). The costs of delay are greater than the production costs, and they impact stakeholders such as governments and local communities (Renaud & Kumral, 2020). Floyd et al. (2017) argue that project success is determined by three key constraints: time, budget, and quality, with time having a significant impact on both budget and quality. Renaud & Kumral (2020) argue that rigorous scheduling of the project maximizes success for large-scale mine construction projects. In their study, the use of a combination of Critical Path Method (CPM) and Linear programming (LP) optimizes the project value, with the results of reducing the duration of the project from 263 weeks to 234 weeks, improving Net Present Value (NPV) by 127 million dollars (Renaud & Kumral, 2020).

According to Norrie and Walker (2004), the alignment between a project and an organization’s strategy should be one of the key criteria for measuring whether the project was successful or not. The organization’s strategy should align with project management, as projects are created to support the organization’s overall strategy (Ansari, Shakeri, & Raddadi, 2015). Strategic alignment is described as the degree of fit between an organization's environmental conditions, its strategy, and internal aims and capabilities, emphasizing that this alignment has a significant effect on organizational performance (Ginsberg & Venkatraman, 1985). Most studies have focused on the alignment of projects and strategy from a single organization’s perspective, but in large and complex strategic projects, multiple organizations often collaborate and participate in the project with each of their own competitive aims and goals (Matinheikki, Artto,

Peltokorpi, & Rajala, 2016; Haniff & Galloway, 2022). Large and complex projects often involve not only the customer but also various contractors and consultants with their own strategic objectives, making it challenging to align the different interests and aspirations (Haniff & Galloway, 2022).

The theoretical framework of this thesis is based on relational governance. Relational governance is a key strategy for managing business relationships, helping to mitigate risks when contracts alone are insufficient in today's complex and volatile markets (Yi-Hsin Lin et al., 2021). Relational governance emphasizes market transactions based on mutual trust and relational norms (Benítez-Ávila et al., 2018). Project governance is considered one of the most important key factors for successful project delivery and achieving its intended benefits (Musawir et al., 2020). The literature on project governance is fragmented, and despite previous research efforts, there is still a lack of consensus on its definition and core elements (Musawir et al., 2020).

2.2 Factors contributing to a successful B2B business relationship

Business-to-business (B2B) relationships can be "alliances, joint ventures, partial acquisitions, licensing and other types of contractual relationships" (Singh & Gaur, 2021, p.1). B2B relationships are common for international operations among multinational corporations (MNCs), often formed to leverage local advantages offered by the host country (Singh & Gaur, 2021). There are additional challenges when B2B relationships are international, particularly between home and host markets, due to institutional and cultural differences (Vanacker et al., 2021). Most B2B relationships can be categorized as either equity-based or non-equity-based (Singh & Gaur, 2021). For example, equity-based relationships include joint ventures and partial acquisitions, while non-equity relationships encompass licensing and buyer-supplier contracts (Singh & Gaur, 2021).

In relationship management literature, the long duration of the relationship is often highlighted; however, it is essential to remember that the longevity of the relationship does not guarantee customer profitability (Ojasalo, 2001). The key to a successful

business relationship lies in information and effective communication (Ojasalo, 2002). Key account management (KAM) is usually associated with B2B relationships, with most research focusing on industrial markets (Ojasalo, 2001). However, it also plays a significant role in the service sector (Ojasalo, 2001). Since business relationships often involve both tangible products and intangible services (Grönroos, 1990), it means that KAM is relevant across different industries (Ojasalo, 2001). Effective key account management requires an understanding of both product and service dynamics (Ojasalo, 2001). Additionally, strong operational execution is insufficient without solid strategic leadership, and vice versa; KAM connects these two levels by integrating strategic and operational marketing management (McDonald et al., 1997).

According to Clark and Rajaratnam (1999), there are four types of services: contact-based services (e.g., consultancy), vehicle-based services (e.g., communication via satellite), asset-based services (e.g., banks), and object-based services where the services are combined with physical products. In the sales of complex services and solutions, the salespeople's ability to build strong personal relationships and trust is critical (Arli et al., 2018). Additionally, personalization is becoming increasingly important, and solution selling can include everything from design to just-in-time delivery to cut costs (Arli et al., 2018). Industries are increasingly adopting customer relationship management strategies, relying more on customer relationship managers and key account managers rather than solely on traditional salespeople or managers (Arli et al., 2018).

Relationships with customers are developed at both the interorganizational and interpersonal levels, with the latter receiving far less research attention (Koponen & Julkunen, 2022). According to Haytko (2004), personal relationships can either have positive or negative effects from an organizational perspective. The negative effects can include, for example, that a strong personal relationship prolongs the relationship between organizations that should have ended. Bolton et al. (2003) found that social

bonds formed through personal interactions have a strong positive impact on customers' satisfaction with company representatives and their perceived value.

2.2.1 Long-term business-to-business customer relationships

An average length of a business relationship is 15 years (Young and Denize, 1995). Long-term business-to-business relationships with customers that are profitable are important for the companies' success (Koponen & Julkunen, 2022). Studies have found that the highest levels of trust and commitment are typically found in mature, long-term B2B relationships (Zhang et al., 2016). According to the Pareto principle, the majority of a company's profits typically come from the 20% of customers with whom it has established mature, long-term, and profitable relationships (Anderson, 2006). According to Arli, Bauer & Palmatier (2018), the definition of relationship selling is the process of focusing, building, maintaining, and securing long-term relationships with profitable customers.

Relational governance has evolved in the past decades from traditional, face-to-face, salesperson-led interactions to collaborative, solutions-driven approaches across multiple communication channels (Arli et al., 2018). The theoretical focus has shifted from early power-dependence perspectives toward trust- and commitment-based frameworks, reflecting the increasing importance of creating long-term value in B2B markets. The focus on customers grew significantly in the 2000s (Arli et al., 2018). Weitz and Bradford (1999) highlighted the importance of value creation and partnering, describing salespeople as working with their customers and companies to develop solutions that enhance the profits of both firms, rather than simply slicing the pie to increase it. This requires a long-term commitment and working together in a mutually beneficial way, building a relationship that is difficult for competitors to replicate, which can provide a competitive advantage for the company (Weitz and Bradford, 1999).

2.2.2 Trust in business-to-business relationships

B2B customers deal with more complex services and solutions, so trust and personal relationships are critical (Viio & Grönroos, 2014). Trust and reliance are important in establishing long-term relationships (Jiang et al., 2011). There are incentives to collaborate and build trust, but there are also reasons to distrust business partners (Lewicki et al., 1998). According to Lewicki et al. (1998), trust is defined as having confident positive expectations about another person's words, actions, and decisions. Believing they have good intentions and being willing to rely on them (Lewicki et al., 1998). Trust has a key role in social exchange theory (Blau, 1986).

In contrast, distrust is defined as confident negative expectations, assuming the intentions of the other person as malicious and seeking to protect oneself from their actions (Lewicki et al., 1998). Day et al. (2013) define trust as the confidence that the parties will fulfill their obligations as agreed upon and, when making decisions, consider the welfare of the business partner. Distrust affects relationship performance, and the escalation of distrust can harm the relationship (Jiang et al., 2011). According to Hakanen et al. (2016), distrust can begin with differing understandings of the goals, which can lead to the parties avoiding each other and ultimately cause them to grow apart.

According to Gordon (2000), business relationships persist as long as mutual value is being created and shared. Trust is crucial in business relationships, but ultimately, improving financial performance is the primary goal (Obadia, 2010). While Ring and Van De Ven (1992) argue that individual trust depends on completed transactions, other perspectives suggest that personal relationships may also develop during negotiations or preparatory stages, even when the transaction does not materialize. When trust exists, business partners are more likely to invest in the relationship and strengthen organizational ties (Jiang et al., 2011). If the other party perceives that their business partner is acting opportunistically and taking unexpected actions that lead to negative outcomes, then this makes the relationship particularly unstable (Jiang et al., 2011). Close personal relationships and high levels of trust between individuals in different

organizations may create vulnerabilities, as they can make it easier for the other party to act opportunistically and take advantage of the situation (Williamson, 2023). According to Mouzas et al. (2007), the most successful business relationships have both high reliance and trust between the partners. Another advantage of trust between partners is that the parties are more likely to give constructive criticism to each other (Hakanen et al., 2016). In cross-cultural negotiations, establishing trust is crucial for achieving a successful outcome (Falcão & Wiegelmann, 2025).

Cerić et al. (2021) conducted a study on trust in megaprojects, highlighting the importance of trust in the delivery of the projects. Megaprojects are defined as complex projects with long durations, having societal relevance, and requiring significant investment of over 1 billion (Cerić et al., 2021). Trust has been extensively examined in project management literature in recent years, playing a crucial role in project success, teamwork, quality management, conflict resolution, relational governance, and disaster recovery efforts (Cerić et al., 2021). The study by Cerić et al. (2021) found that research on trust in megaprojects remains relatively unexplored, thematically fragmented, and lacks strong theoretical foundations.

2.2.3 Communication in business-to-business relationships

Today, B2B sales, information sharing, and relationship building increasingly take place online (Koponen & Julkunen, 2022). Customer relationships may be initiated and developed through social media, phone calls, text messages, emails, and video meetings, with in-person meetings typically occurring only in the later stages of the process, if at all (Bharadwaj & Shipley, 2020). In B2B relationships, geographic distance can make it more challenging to communicate frequently and engage in informal interactions between business partners (Singh & Gaur, 2021). Personal and informal contacts are crucial for gathering knowledge about the business partner, as they can help build trust, which is essential for a successful B2B relationship (Kang & Kim, 2008). Academic literature is divided on the role of face-to-face interactions in relationship quality, with

some studies undermining its importance and others emphasizing its necessity (Arli et al., 2018).

2.2.4 Reputation and commitment in business-to-business relationships

The violation of societal norms and commonly accepted practices can lead to reputational and legitimacy losses (Mukherjee et al., 2018). For example, although there may not be official rules governing the fair and just treatment of employees, failing to do so can harm the company's reputation (Singh & Gaur, 2021). Consequently, it can be more challenging for the company to attract top talent in the future, and the fear of this outcome motivates companies to treat their employees justly and fairly (Singh & Gaur, 2021). Another example of the benefits of a good reputation is that when a company buys components from a producer with a good reputation, it can use that as a reference when reselling its products forward (Ojasalo, 2001). Trust and commitment are closely linked, and when parties are committed, they are more likely to invest in the collaboration, which in turn deepens the trust between business partners (Hakanen et al., 2016). When a party demonstrates evidence of a long-term commitment that fosters trust in the other party (Hakanen et al., 2016).

2.2.5 Informal social interactions in business-to-business relationships

The literature on trust has primarily focused on inter-organizational relationships, with limited research on the impact of interpersonal relationships on trust in business relationships or on the formation of informal relationships (Hakanen et al., 2016). Establishing new business relationships requires interpersonal trust, and it is important to understand the impact of interpersonal trust in business relationships (Hakanen et al., 2016). Informal meetings and personal chemistry are important in building and maintaining trust in business relationships (Hakanen et al., 2016). Trust can be studied at multiple levels, such as individual, organizational, network, and societal (Batt, 2008). Trust is one of the most important characteristics of social capital, and people tend to trust strangers more easily who share similar characteristics with themselves, such as a

similar background or the same religion (Batt, 2008). Trust is based on personal experience (Batt, 2008). Social capital is an umbrella term that trust falls under and is one of its many important parts (Lyon, 2000). Relationships can be built outside offices, for example, golfing has traditionally been a successful tool for networking and negotiating deals (Gray et al., 2020).

2.3 Risk management in international projects

Already in 2020, risk levels in international business were at an unprecedented high due to the increased risk of national conflicts, wars, terrorism, and corruption (Cavusgil et al., 2020). The differences in institutional, cultural, and economic environments between the host and home markets can incur additional costs for MNCs due to a lack of knowledge of the host market, challenges in building relationships, and potential discrimination faced by foreign firms (Singh & Gaur, 2021; Zeng & Xu, 2020). In literature, risks are often listed separately; however, in practice, different aspects of risk are often intertwined with one another (Singh & Gaur, 2021). The pandemic has accelerated changes in globalization, resulting in unique challenges for international businesses in the post-COVID world (Delios et al., 2021). Due to COVID-19, most supply chains were disrupted, revealing to MNCs the extent of their dependency on business relations, which can make them vulnerable (Singh & Gaur, 2021).

Risks that MNCs face in international business can be divided into internal and external risks (Singh & Gaur, 2021). Internal risks include finding a good B2B partner due to a lack of information and the challenges that may arise from collaborating with them (Singh & Gaur, 2021). External risks include differences between the host and home institutions, geographic and cultural distance, and country-specific risks (Singh & Gaur, 2021). Country risk refers to conditions, situations, or events that may negatively impact the performance or decrease expected profits in a specific country (Cavusgil et al., 2020). Country-specific risks include government policies, social and macroeconomic conditions, the political environment, natural disaster risk, and hidden taxes (Cavusgil et al., 2020).

2.4 The impact of social protests on large international projects

Under international law, governments and companies are required to engage with affected communities, particularly through the principle of 'Free, Prior, and Informed Consent,' as established in the United Nations Declaration on the Rights of Indigenous Peoples and the International Labour Organization Convention 169 (Hanna & Vanclay, 2013). A key demand of Indigenous peoples is the right to participate in decisions on whether and how a project, such as a dam or a mine, moves forward when it affects their livelihoods (Hanna & Vanclay, 2013). The Free, Prior, and Informed Consent recognises the right of Indigenous people to their land and natural resources, and respects their right to make decisions based on informed consent, as well as an equal and respectful relationship with third parties (Hanna & Vanclay, 2013). The principle of ´Free, Prior and Informed Consent' is a fundamental cornerstone of the Indigenous peoples' right to self-determination (Hanna & Vanclay, 2013).

Unfortunately, the principles of 'Free, Prior and Informed Consent' and the right to self-determination are not respected in many countries (Hanna & Vanclay, 2013). Governments often violate these rights, especially in projects of national interest, including state-corporate projects (Hanna & Vanclay, 2013). In addition, when companies only meet the minimum requirements, they often disregard international human rights standards (Hanna & Vanclay, 2013). Protesting is a standard part of the process of obtaining an environmental license, often because organizations have failed to conduct the Social Impact Assessment and 'Free, Prior and Informed Consent' processes (Hanna et al., 2016). Unfortunately, organizations often become defensive against protesters, instead of listening to their concerns, which can further escalate the conflict (Hanna et al., 2016). Defensive behaviour includes, for example, the criminalization of the protestors, denying their claims, turning attention to the less problematic aspects of the organization (greenwashing), and strategic lawsuits against public participation (Hanna et al., 2016). Instead, organizations should see protests as an opportunity to address the problems of local communities instead of treating them as a crisis (Hanna et al., 2016).

The defensive strategy can lead to significant reputational damage as it has to Nike and Shell (Klein, 2000).

2.4.1 Social protests in mining project development

Companies that fully implement 'Free, Prior and Informed Consent (FPIC)' and respect the rights of communities, involving them in the decision-making process, benefit from reduced conflict, a lower chance of reputational damage, and lower risks and costs (Hanna & Vanclay, 2013). Community-company relationships can be easier when FPIC is applied, as the relationship is then based on trust rather than conflict (Hanna & Vanclay, 2013). Organizations that actively uphold the principle of FPIC and engage with local communities are less likely to face protests and more likely to gain a social license to operate (Hanna et al., 2016). Blockades, rallies, and boycotts, as well as digital protests including social media campaigns, online petitions, and tweets, are some of the constantly evolving forms of protest (Hanna et al., 2016). With large projects, communities often feel the need to mobilize to gain respect for their rights and to participate in the decision-making processes that impact their lives (Hanna et al., 2016). Community protests can have a significant impact on the progress of large-scale projects, such as dams, mines, and other major infrastructure projects (Hanna et al., 2016). When protests gain extensive media coverage, it gives protesters leverage to compel decision-makers to consider their demands (Hanna et al., 2016).

2.5 Decision-making theories

There are three main components for decision-making: first, courses of action, which means the different options the decision-maker can choose from; secondly, beliefs about objectives and processes, which means understanding the current situation, process, and outcome; and thirdly, desires, which means the preferences of the outcome (Hastie, 2001). There needs to be a minimum of two options to choose from for a decision to be made (Certo et al., 2008). Decision-making is a cross-disciplinary and widespread phenomenon in organizations, and it can be observed at the individual, group, or

organizational level (Jordão et al., 2020). A manager's ability to make quality decisions quickly has a significant impact on the company's success (Certo et al., 2008). Some decisions are open questions with many possible alternatives, such as "How should we enter a new market? " and some decisions are simple "yes" or "no" decisions, "Should we hire a new person? " (Certo et al., 2008). According to Hastie (2001), good decisions are those in which available resources are used efficiently to achieve outcomes that align with the organization's goals.

The concept of two cognitive systems, which play an important part in decision-making, was first introduced by psychologist Daniel Kahneman in his book Thinking, Fast and Slow (Certo et al., 2008). System 1 is fast and automatic, operating intuitively without conscious effort (Certo et al., 2008). According to Kahneman (2003), System 1 partly relies on habit, and therefore, it is hard to recognize. System 2 is slow and analytical, requiring conscious effort, and involves problem-solving and complex decision-making (Certo et al., 2008). According to Evans (2003), both humans and animals have System 1, but System 2 has only developed in humans. System 2 is often seen as the more rational decision-making process (Certo et al., 2008). It would not be efficient for managers to rely solely on System 2, so they must use System 1 when possible (Chugh, 2004). Several factors hinder the functioning of these processes (Certo et al., 2008). It is crucial to understand various concepts of decision-making to comprehend better how people make economic decisions that are often influenced by biases and heuristics (Certo et al., 2008). However, recent studies critique the System 1 and 2 divide as too strict and simple. Hochman (2024) argues that, according to studies, both intuitive and deliberate processes can adapt, allowing systems to work in an overlapping and flexible manner, influenced by context, experience, and cognitive demands.

2.5.1 Bounded rationality and prospect theory

In the literature, the most significant assumption is that decision-makers are rational (Certo et al., 2008). Herbert Simon questioned this assumption when he introduced the concept of bounded rationality (Simon, 1955). He (1955) was the first to study bounded

rationality, focusing on how decisions are made with limited information-processing abilities. Since his work, the topic has been studied extensively in psychology, economics, political science, cognitive science, computer science, and artificial intelligence research (Genewein et al., 2015). Bounded rationality refers to selecting a feasible solution that is both satisfactory and achievable (Horvitz & Zilberstein, 2001). The goal of bounded rational decision-making is to process the most relevant information to maximize its usefulness, taking into account the limitations of information processing (Genewein et al., 2015). Simon's work demonstrates that managers are often compelled to make decisions without the necessary resources, and with better resources, better decisions could be made as well (Certo et al., 2008). To link the theory to this thesis, project managers at the operational level are responsible for making decisions to achieve project objectives (Haniff & Galloway, 2022). These decisions are shaped by the strategic guidance of senior management, influenced by external environmental factors, and ultimately limited by the bounded rationality of the project manager (Cyert & March, 1963).

Researchers have taken different approaches to bounded rationality, ranging from heuristics to methods based on approximate statistical inference (Genewein et al., 2015). Heuristics are cognitive shortcuts or rules of thumb that people use to make decisions quickly and efficiently (Jordão et al., 2020). They are useful and efficient decision-making tools that help reduce cognitive effort (Jordão et al., 2020). However, over-reliance on intuition can lead to errors in judgment (Jordão et al., 2020). These systematic and predictable mistakes are referred to as biases (Jordão et al., 2020). Some researchers argue that the cognitive bias is a result of limited cognitive resources (Simon, 1956; Griffiths, Lieder, & Goodman, 2015). The study by Jordão et al. (2020) focuses on three key biases: overconfidence, optimism, and the anchoring effect.

Another cognitive bias is the availability bias, where people overestimate the probability of events based on how easily they come to mind (Tversky & Kahneman, 1973). Extreme events, such as terrorism, come to mind more easily because strong emotions enhance

memory, allowing us to recall those events that have evoked a strong positive or negative emotion (Lieder et al., 2018). For example, one might recall the rare occasion of winning at a casino more clearly than the numerous times they lost small amounts there (Lieder et al., 2018). The strength of memory traces affects decision-making, for example, when a person needs to decide whether to stop gambling or continue (Lieder et al., 2018). The positive memory of winning has a greater impact on the decision because it is stronger than the memory of losing small amounts many times (Lieder et al., 2018). This bias is against the fundamentals of probability theory (Lieder et al., 2018). However, the benefit of overestimating extreme events is that even the most unlikely consequences, which can have a major impact, are taken into account despite their low probability, for example, a catastrophe or a unique opportunity (Lieder et al., 2018).

Another important cognitive bias is the escalation of commitment, where managers are more likely to allocate resources to projects that are failing rather than those succeeding (Staw & Ross, 1989). Escalation situations occur when losses are incurred, but there is still a possibility to alter the outcome by investing more effort, time, and resources (Staw & Ross, 1989). Escalation of commitment is also known as "the psychology of entrapment, the sunk cost effect and the too-much-invested-to-quit-syndrome" (Staw & Ross, 1989, p. 216). Some researchers argue that escalation behaviour can be seen as a rational calculation, but this requires considering not only economic factors but also psychological and social costs, such as the embarrassment of admitting failure (Staw & Ross, 1989). People put more likely resources into a project to justify their previous behaviour of starting the project, because people do not want to be personally responsible for any losses, and that is how you get easily locked into the escalation of commitment (Staw & Ross, 1989). People invest money in a project more to avoid responsibility for the losses because when the original decision to invest was made by someone else, they are less likely to invest further (Staw & Ross, 1989). People are hesitant to show their errors to others (Staw & Ross, 1989). In prospect theory, managers may make irrational decisions to avoid losses or when the payoff is huge (Certo et al., 2008).

3 Methodology

3.1 Research Design

This study adopted a single-case study design, as defined by Yin (2017), to explore investment behaviour in large international industrial projects. A case study approach was considered appropriate due to the contemporary nature of the phenomenon and its occurrence within a real-life organizational context. The case study enabled an in-depth, holistic understanding of the contextual factors influencing customer decision-making. This thesis uses a mixed-methods approach, integrating both quantitative and qualitative data. A triangulation strategy was applied by collecting information from multiple sources (sales data and interviews), which strengthened the credibility of the findings.

3.2 Data gathering

Quantitative data

In the quantitative study, the data consist of the case company's historical order records from 2020 to 2024, and all available data were used. As the analysis period covers the years 2020–2024, it is important to note that the COVID-19 pandemic may have impacted both the macroeconomic indicators and the case company's business activity during this time. The order records are stored in the company's Customer Relationship Management (CRM) system as monthly totals in euros. This thesis focuses on large projects; orders greater than 500,000 euros were included. The dataset consists of service and spare part orders from the minerals and mining sector.

The variables included in the analysis were commodity prices: gold, copper, silver, nickel, lithium, and iron ore, key currency exchange rates: EUR/USD, EUR/CNY, and EUR/CLP, and macroeconomic indicators: Brent Crude, interest rates (ECB and US), and PMI Eurozone and Global. To ensure data reliability, company records were supplemented with publicly available datasets from international economic institutions.

Qualitative data

The qualitative part of the study is based on semi-structured interviews with employees of the case company responsible for specific project sales. A total of 15 B2B partnerships (A–O) were examined. In total, 17 interviews were conducted: 15 B2B partnership-specific interviews with company representatives, and in partnership F, two additional interviews were included, one with another internal stakeholder and one with the customer, offering a valuable external viewpoint. Most interviews were conducted via Microsoft Teams, with one carried out face-to-face at the case company's office. Interview duration ranged from 30 to 60 minutes, with the typical duration being approximately 45 minutes.

The interviews were conducted to capture a deeper, experience-based understanding of the sales process in large international industrial projects. The discussions covered the customer's decision-making process, interaction with the case company, reasons for winning or losing projects, and key lessons learned. The aim was to uncover underlying factors behind project outcomes and identify recurring patterns across partnerships.

The interviews were selected through purposeful sampling, focusing on stakeholders directly involved in large B2B project sales, and ensuring geographical diversity across different regions. All participants provided informed consent, and anonymity and confidentiality were assured throughout the research process. All interviews were transcribed, and the material was later analysed using thematic analysis. A primarily deductive approach was used, guided by predefined themes related to investment decision-making and customer behaviour.

3.3 Data analysis

The triangulated analytical approach increased the credibility of the findings (Creswell & Plano Clark, 2018) and allowed for a more comprehensive view of investment behavior by combining numerical trends with stakeholder insights.

Quantitative analysis

This study follows the transparency recommendations of Meyer et al. (2017) to avoid biased statistical practices and ensure accurate reporting of results. The quantitative analysis focused on examining the relationships between monthly order intake and macroeconomic indicators using correlation and regression analysis.

3.3.1 Research hypothesis

This study investigates whether macroeconomic indicators influence the case company's monthly order intake. The main and null hypotheses are the following:

Main Hypothesis (H1):

Macroeconomic indicators have a statistically significant influence on the case company's monthly order intake.

Null Hypothesis (H0):

Macroeconomic indicators have no statistically significant influence on the case company's monthly order intake.

A Pearson correlation analysis was conducted using SPSS to examine the relationships between monthly order intake and a range of macroeconomic indicators at 0-, 1-, 2-, and 3-month lags. Lagged indicators were included to capture potential delayed effects of macroeconomic changes on order intake. Based on the results of this initial analysis, variables showing the strongest and most statistically significant relationships were chosen for further testing. The correlations were calculated using monthly data from January 2020 to December 2024 (n = 57 to 60, depending on lag), which provides a sufficient amount of data for exploratory correlation analysis.

Step 1: Pearson correlation analysis on commodity prices

The analysis examined whether there was a statistically significant correlation between the case company's monthly order intake and commodity prices with a 0-,1-, 2-, and 3-month lag, specifically gold, copper, silver, nickel, lithium, and iron ore.

Step 2: Pearson correlation analysis on key currency exchange rates

The analysis examined whether there was a statistically significant correlation between the case company's monthly order intake and key currency exchange rates with a 0-,1-, 2-, and 3-month lag, including EUR/USD, EUR/CNY, and EUR/CLP.

Step 3: Pearson correlation analysis on key macroeconomic indicators

The analysis examined whether there was a statistically significant correlation between the case company's monthly order intake and additional macroeconomic indicators with a 0-,1-, 2-, and 3-month lag, such as Brent Crude oil prices, interest rates (ECB and the US Federal Funds Effective rate), and Purchasing Managers' Index (PMI) for the Eurozone and globally.

The quantitative analysis was carried out using Pearson correlation and regression analysis. Pearson correlation was chosen as a straightforward method to test linear associations between order intake and macroeconomic indicators, including time-lagged variables (Cohen, 1988). Regression analysis was then applied to study the explanatory power of the most significant variables identified in the correlation phase. Regression analysis was used to evaluate whether combinations of variables could jointly explain variation in order intake beyond individual correlations. As the dataset covers monthly observations from 2020 to 2024, the sample size per lag is relatively small, and the series may include autocorrelation or non-stationary behaviour. Regression assumptions (linearity, independence, homoscedasticity, and normality) were reviewed to ensure the validity of the results. Therefore, the correlations should be interpreted as indicative relationships rather than direct causal effects.

Qualitative analysis

The interviews were analysed using thematic analysis, following the approach of Braun and Clarke (2006), which is commonly used for identifying, analysing, and reporting patterns within qualitative data. This method was chosen because of its flexibility in capturing patterns across different types of responses. The analysis was conducted manually by first familiarising with the interview content, then coding the responses line by line. From these codes, recurring themes were identified and grouped to form the basis of the findings. The themes that emerged from the data were organizational experience, customer relationship and trust, communication, understanding the customer's decision-making process, and the role of risk management in large B2B project decisions.

3.4 Case Description

The case company was selected based on its relevance to the research topic, its extensive involvement in international B2B project sales, and its accessibility to both qualitative and quantitative data. The case company is a Finnish multinational listed company in the mining and minerals sector. It provides solutions and services across the entire minerals value chain and operates in over 50 countries.

The company's offering includes equipment, process solutions, digital tools, and after-sales services that support customers from mine design to refining and recycling. Its global operations are organized into several business areas, each focusing on specific segments of the minerals industry, such as aggregates, metals, and process technologies.

The company serves a wide customer base, including mining companies, smelters, and industrial processing plants. As a global leader in large-scale project deliveries, it operates in highly competitive markets where long-term relationships, technological expertise, and trust play a critical role in investment decisions. This makes the company an ideal subject for studying how internal and external factors influence decision-making in complex B2B project environments.

4 Research Findings from the quantitative study

This section presents the findings of the quantitative study and aims to answer the first research question: *How macroeconomic factors influence sales orders?.*

4.1.1 Pearson Correlation Analysis on commodity prices

A Pearson correlation analysis was conducted to assess the relationship between the case company's monthly sales orders and six key commodity prices (gold, copper, silver, nickel, lithium carbonate, and iron ore), using 0-3-month lags. The sample size varied slightly due to lagging (n = 57 to 60). The results are presented in Table 1 below.

Table 1: Pearson correlation results of gold, copper, silver, nickel, lithium carbonate, and iron ore (0–3 month lag)

Variable	Lag	r-value	p-value	Interpretation
Gold price	0-month lag	0.019	0.887	Not statistically significant
	1-month lag	0.039	0.777	Not statistically significant
	2-month lag	0.046	0.739	Not statistically significant
	3-month lag	–0.001	0.997	Not statistically significant
Copper price	0-month lag	0.191	0.143	Not statistically significant
	1-month lag	0.245	0.068	Not statistically significant
	2-month lag	0.265	0.045	**Statistically significant**
	3-month lag	0.257	0.061	Not statistically significant
Silver price	0-month lag	–0.049	0.712	Not statistically significant
	1-month lag	–0.019	0.889	Not statistically significant
	2-month lag	0.008	0.950	Not statistically significant
	3-month lag	0.000	0.999	Not statistically significant

Nickel price	0-month lag	0.266	0.040	**Statistically significant**
	1-month lag	0.312	0.016	**Statistically significant**
	2-month lag	0.339	0.009	**Statistically significant**
	3-month lag	0.300	0.023	**Statistically significant**
Lithium	0-month lag	0.272	0.035	**Statistically significant**
	1-month lag	0.278	0.033	**Statistically significant**
	2-month lag	0.276	0.036	**Statistically significant**
	3-month lag	0.274	0.039	**Statistically significant**
Iron ore	0-month lag	–0.082	0.532	Not statistically significant
	1-month lag	–0.150	0.256	Not statistically significant
	2-month lag	–0.151	0.256	Not statistically significant
	3-month lag	–0.119	0.379	Not statistically significant

Pearson Correlation Analysis: Gold, copper, silver, nickel, lithium carbonate, and iron ore (0–3 Month Lag)

Gold and silver prices showed no statistically significant correlations across any lags and were excluded from further analysis. Copper demonstrated a statistically significant weak positive correlation only at a 2-month lag ($r = 0.265$, $p = 0.045$, and it was included in further testing. Nickel prices ($/tonne) showed consistent positive correlations across all lags, with the strongest correlation at 2 months ($r = 0.339$, $p = 0.009$). Given the consistent significance and moderate effect sizes, nickel will be included in further testing. For lithium carbonate global average prices ($/tonne), all tested lags for lithium carbonate prices showed statistically significant, weak to moderate positive correlations with monthly order intake. The coefficients were similar across timeframes ($r=0.272$ to 0.278).

For the iron ore test, there were three options to consider. The options were NYMEX-Iron Ore 62% FE ($/tonne), the Platts Standard 58%-Fe Assessment ($/dmt), and the TS01021: The Steel Index Iron Ore Fines 62% ($/tonne). The TS01021: The Steel Index (TSI) Iron Ore Fines 62% Fe ($/tonne) was chosen for this study, because it was the most used benchmark in global trade (Jégourel, 2020). Iron ore prices did not correlate

significantly with sales orders at any lag, and therefore, the steel index iron is not studied further.

4.1.2 Pearson Correlation Analysis on key currency exchange rates

This section examines the relationship between the case company's monthly order intake and three key currency exchange rates: EUR/USD, EUR/CNY, and EUR/INR, using Pearson correlation across 0 to 3-month lags. In Table 2 below, the results are reported.

Table 2: Pearson correlation results of exchange rates (0–3 month lag)

Variable	Lag	r-value	p-value	Interpretation
EUR to USD	0-month lag	–0.263	0.046	**Statistically significant**
	1-month lag	–0.227	0.089	Not statistically significant
	2-month lag	–0.138	0.301	Not statistically significant
	3-month lag	–0.101	0.453	Not statistically significant
EUR to CNY	0-month lag	–0.327	0.012	**Statistically significant**
	1-month lag	–0.316	0.017	**Statistically significant**
	2-month lag	–0.249	0.065	Not statistically significant
	3-month lag	0.224	0.100	Not statistically significant
EUR to INR	0-month lag	–0.093	0.487	Not statistically significant
	1-month lag	–0.038	0.777	Not statistically significant
	2-month lag	0.023	0.866	Not statistically significant
	3-month lag	–0.141	0.766	Not statistically significant

Pearson Correlation Analysis: Exchange Rate EUR to USD, EUR to CNY, and EUR to INR (0–3 Month Lag)

The EUR/USD exchange rate showed a weak negative correlation with sales orders at the 0-month lag ($r = –0.263$, $p = 0.046$). This suggests that as the EUR to USD exchange rate increases (the EUR strengthens against USD), sales orders tend to decrease, and when exchange rates decrease, the sales orders increase, possibly due to reduced competitiveness of exports priced in euros when the euro is stronger, and or by exchange rate impacting the customer purchasing power. At longer lags, no statistically significant relationships were found. Because the only statistically significant relationship is

observed with a 0-month lag, this supports the idea that the currency fluctuations have an immediate rather than delayed impact on sales.

For the EUR/CNY exchange rate, moderate and statistically significant negative correlations were also observed at the 0-month ($r = –0.327$, $p = 0.012$) and 1-month lags ($r = –0.316$, $p = 0.017$). This relationship should not be interpreted as a direct pricing effect in the Chinese market, since the case company does not mainly price its offering in EUR and local pricing is based on several factors. The correlation is more likely to reflect broader macroeconomic developments that influence overall investment activity rather than a China-specific demand effect. The relationship is slightly stronger than with the euro-US dollar exchange rate ($r = –0.327$ vs. $–0.263$), indicating that the Chinese market may be more sensitive to exchange rate fluctuations. Similar to the EUR to USD exchange rate, the correlation between the exchange rate and the sales orders is strongest immediately. The data imply that exchange rate fluctuations between the euro and yuan have both immediate and slightly delayed effects on sales, but the impact weakens after one month. The 2-month and 3-month lags did not produce significant results.

No statistically significant correlations were found between the EUR/INR exchange rate and monthly sales orders. This means that fluctuations in the EUR/INR exchange rate have no significant impact on the case company's sales orders in this business line, and EUR/INR was excluded from further analysis.

4.1.3 Pearson Correlation Analysis on macroeconomic indicators

This section studies the relationship between the case company's monthly order intake and four macroeconomic indicators: the ECB overnight deposit rate, the U.S. Federal Funds Effective Rate, Brent Crude oil prices, and the Purchasing Managers' Index (PMI) for the Eurozone and globally. Each variable was tested at 0-, 1-, 2-, and 3-month lags using Pearson correlation analysis. In Table 3 below, the results are shown.

Table 3: Pearson correlation results of macroeconomic indicators (0–3 month lag)

Variable	Lag	r-value	p-value	Interpretation
ECB overnight deposit rate	0-month lag	0.142	0.293	Not statistically significant
	1-month lag	0.094	0.485	Not statistically significant
	2-month lag	0.067	0.621	Not statistically significant
	3-month lag	0.077	0.568	Not statistically significant
US Federal Funds Effective rate	0-month lag	0.142	0.293	Not statistically significant
	1-month lag	0.094	0.485	Not statistically significant
	2-month lag	0.067	0.621	Not statistically significant
	3-month lag	0.077	0.568	Not statistically significant
The Brent Crude	0-month lag	0.358	0.006	**Statistically significant**
	1-month lag	0.371	0.004	**Statistically significant**
	2-month lag	0.347	0.008	**Statistically significant**
	3-month lag	0.216	0.106	Not statistically significant
PMI Eurozone	0-month lag	0.078	0.652	Not statistically significant
	1-month lag	0.053	0.766	Not statistically significant
	2-month lag	0.063	0.725	Not statistically significant
	3-month lag	0.014	0.446	Not statistically significant
PMI Global	0-month lag	0.255	0.134	Not statistically significant
	1-month lag	0.171	0.318	Not statistically significant
	2-month lag	0.019	0.914	Not statistically significant
	3-month lag	–0.012	0.948	Not statistically significant

Pearson Correlation Analysis: The ECB overnight deposit rate, the US Federal Funds Effective rate, the Brent Crude, the Purchasing Managers' Index (0–3 Month Lag)

The European Central Bank's deposit rate is a key indicator of the eurozone's interest rate policy; it is typically the primary tool used by the ECB to influence inflation and economic activity. The ECB deposit rate did not have a statistically significant correlation with the sales orders. The US Federal Funds Effective Rate is the average interest rate at which U.S. banks lend money to each other overnight to meet reserve requirements. It is a globally relevant rate because changes in it impact exchange rates, investment decisions, and commodity prices. There is no evidence of a meaningful relationship between the interest rate levels in the US and the case company's sales orders. Therefore,

the US Federal Funds Effective rate and the ECB overnight deposit rate will not be studied further.

The global price of Brent Crude in US dollars per Barrel, monthly not seasonally adjusted, is a primary trading classification of crude oil that serves as a benchmark price for oil purchases worldwide, particularly in Europe, Africa, and the Middle East. Monthly, not seasonally adjusted, means the price represents the average of daily closing prices for each month, reflecting actual market fluctuations, including both long-term trends and short-term seasonal spikes or drops. The global price of Brent Crude oil was compared with the case company's sales orders, and a moderate positive correlation was found at a 0-month lag ($r = 0.358$, $p = 0.006$), at a 1-month lag ($r = 0.371$, $p = 0.004$), and at a 2-month lag ($r = 0.347$, $p = 0.008$). As the price of Brent Crude increases, the case company's sales orders also tend to grow. It could imply that higher oil prices might boost activity in industries that the case company serves, leading to more orders. The correlation in all three is moderate and positive and highly statistically significant, indicating that the higher Brent Crude prices in the previous month(s) are associated with higher sales orders in the current month. The first three results showed statistically significant moderate positive correlations, while the 3-month lag was not. Brent Crude was included for further analysis because of its statistically significant correlation with sales.

The last macroeconomic indicator to be tested is the Purchasing Managers' Index (PMI). PMI is a number between 0 and 100 that reflects the overall economy compared to the previous month (S&P Global, 2025). A PMI over 50 indicates economic growth, while a PMI under 50 signals a decline from the previous month (S&P Global, 2025). The PMI Eurozone and Global both showed no significant correlations with sales at any lag. As a result, both were excluded from further studies.

4.2 Conclusions on Pearson's Correlation Analysis results

This section summarizes the statistically significant findings from the Pearson correlation analysis, which examined the relationship between the case company's monthly order intake and various external factors, including commodity prices, currency exchange rates, and macroeconomic indicators. Each variable was tested with lags of 0, 1, 2, and 3 months. Only the strongest statistically significant result for each variable is reported below and included in further analysis. The correlation analysis revealed that Brent Crude oil prices were most strongly associated with the case company's sales. The 1-month lag showed a moderate positive correlation ($r = 0.371$, $p = 0.004$), suggesting that increases in oil prices may be linked to rising demand in industries served by the company. Nickel prices also showed a statistically significant correlation at a 2-month lag ($r = 0.339$, $p = 0.009$), indicating that higher nickel prices may be followed by an increase in sales orders two months later.

In currency exchange rates, the EUR to CNY exchange rate showed a moderate negative correlation at the 0-month lag ($r = –0.327$, $p = 0.012$), which likely reflects broader macroeconomic developments affecting investment activity. The EUR to USD exchange rate also showed a weak but statistically significant negative correlation at the 0-month lag ($r = –0.263$, $p = 0.046$), suggesting a slightly weaker effect in the U.S. market.

Using Pearson correlation with a five-year monthly dataset ($n = 60$ to 57), the results showed that nickel, lithium carbonate, and copper prices had a statistically significant correlation with the case company's sales orders. Copper only showed correlation with a 2-month lag, whereas Nickel and Lithium showed correlation in every test from 0 to 3 months. Nickel prices showed the strongest correlation at a 2-month lag, with a moderate positive correlation ($r = 0.339$, $p = 0.009$). Lithium carbonate global average prices showed the strongest correlation at a 1-month lag ($r = 0.278$, $p = 0.033$). In contrast, gold, copper, silver, and iron ore showed no statistically significant correlation with sales orders. Their correlation coefficients were close to zero, and p-values exceeded the 0.05 threshold, suggesting that any observed relationships were likely due

to chance. Therefore, only nickel, lithium, and copper will be carried forward into the forecasting phase of the study from commodities. Table 4 below summarizes the statistically significant variables, listed from the strongest to the weakest correlation, based on Pearson's r value. These findings form the basis for the next phase of the study, in which selected indicators will be used in regression analysis and multivariate modeling.

Table 4: Pearson correlation results – strongest correlations

Variable	Correlation (r)	P-value	Interpretation
Brent Crude oil 1-month lag	0.371	0.004	Moderate positive correlation: As oil prices rise orders tend to increase.
Nickel 2-month lag	0.339	0.009	Moderate positive correlation: Rising nickel prices tend to be associated with more orders.
Exchange Rate EUR to CNY, 0-month lag	-0.327	0.012	Moderate negative correlation: Stronger euro makes products more expensive in China, reducing demand.
Lithium 1-month lag	0.278	0.033	Weak to moderate positive correlation: As lithium prices increase, orders tend to increase slightly.
Copper 2-month lag	0.265	0.045	Weak positive correlation: when copper prices increase, sales orders tend to increase slightly two months later.
Exchange Rate EUR to USD, 0-month lag	-0.263	0.046	Weak negative correlation: A stronger euro against USD tends to reduce sales orders.

4.2.1 Correlation matrix

To further understand the relationships between the six variables that showed statistically significant correlations with the case company's sales, a combined Pearson correlation matrix was conducted. This analysis helps reveal possible overlaps between variables and common market patterns. The correlation matrix is presented in Figure 1 below.

Correlations

		Nickel 2-month lag	Lithium 1-month lag	Copper 2-month lag	EUR to USD	EUR to CNY	Brent Crude Oil 1-month lag	Sales orders
Nickel 2-month lag	Pearson Correlation	1	,850**	,602**	-,535**	-,701**	,771**	,368**
	Sig. (2-tailed)		<,001	<,001	<,001	<,001	<,001	,005
	N	56	56	56	56	56	56	56
Lithium 1-month lag	Pearson Correlation	,850**	1	,289*	-,689**	-,680**	,704**	,298*
	Sig. (2-tailed)	<,001		,030	<,001	<,001	<,001	,024
	N	56	57	56	57	57	57	57
Copper 2-month lag	Pearson Correlation	,602**	,289*	1	-,179	-,512**	,737**	,271*
	Sig. (2-tailed)	<,001	,030		,186	<,001	<,001	,043
	N	56	56	56	56	56	56	56
EUR to USD	Pearson Correlation	-,535**	-,689**	-,179	1	,528**	-,685**	-,263*
	Sig. (2-tailed)	<,001	<,001	,186		<,001	<,001	,046
	N	56	57	56	58	58	57	58
EUR to CNY	Pearson Correlation	-,701**	-,680**	-,512**	,528**	1	-,715**	-,327*
	Sig. (2-tailed)	<,001	<,001	<,001	<,001		<,001	,012
	N	56	57	56	58	58	57	58
Brent Crude Oil 1-month lag	Pearson Correlation	,771**	,704**	,737**	-,685**	-,715**	1	,374**
	Sig. (2-tailed)	<,001	<,001	<,001	<,001	<,001		,004
	N	56	57	56	57	57	57	57
Sales orders	Pearson Correlation	,368**	,298*	,271*	-,263*	-,327*	,374**	1
	Sig. (2-tailed)	,005	,024	,043	,046	,012	,004	
	N	56	57	56	58	58	57	58

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Figure 1: Correlation matrix

Strong correlation among metals

The correlation matrix shows that there is a very high correlation between nickel and lithium, r=0.850, p < 0.001. Suggesting that these two variables behave similarly and are likely influenced by the same market trends, for example, battery and electric vehicle production. Nickel also correlates strongly with copper (r = 0.602, p < 0.001), and lithium shows a weaker but still significant correlation with copper (r = 0.289, p = 0.030), indicating that the metals often move together, but not always in the same way.

Exchange rates and commodity prices

The test also found that there is a strong negative correlation between exchange rates and metals:

- EUR to USD and lithium: r = –0.689 (p < 0.001)
- EUR to CNY and lithium: r = –0.680 (p < 0.001)
- EUR to USD and nickel: r = –0.535 (p < 0.001)
- EUR to CNY and nickel: r = –0.701 (p < 0.001)
- EUR to CNY and copper: r = –0.512 (p < 0.001)

These patterns suggest that when the euro strengthens, metal prices (which are usually priced in USD) tend to decrease, supporting the hypothesis that currency fluctuations affect the global pricing of raw materials.

Brent crude oil

Brent crude oil (1-month lag) correlates strongly with all three metals:

- Brent crude oil and nickel: $r = 0.771$ ($p < 0.001$)
- Brent crude oil and lithium: $r = 0.704$ ($p < 0.001$)
- Brent crude oil and copper: $r = 0.737$ ($p < 0.001$)

It also shows a strong negative correlation with exchange rates:

- Brent crude oil and EUR to USD: $r = –0.685$ ($p < 0.001$)
- Brent crude oil and EUR to CNY: $r = –0.715$ ($p < 0.001$)

Brent crude oil is positively correlated with all three metals and negatively correlated with exchange rates. This reflects a common global pattern in which rising oil and commodity prices are linked to a stronger dollar and a weaker euro, often due to inflation or increased demand for raw materials (European Central Bank, 2024).

4.3 Regression analysis

This part of the study investigates how well selected macroeconomic variables explain the variation in the case company's monthly order intake using linear and multiple linear regression analysis. The analysis includes the macroeconomic variables that showed the strongest and most statistically significant correlations with the case company's order intake. Those variables are Nickel (2-month lag), Brent Crude (1-month lag), Exchange Rate EUR to CNY (0-month lag), Lithium (1-month lag), Copper (2-month lag), and Exchange Rate EUR to USD (0-month lag). Both simple linear regressions will be created with one variable at a time, and multiple linear regressions, with combinations of variables, are used to study their individual and combined explanatory power. The analysis is conducted using SPSS, which provides coefficient estimates, significance levels, and model fit indicators (e.g., R^2).

Regression analysis: Brent Crude oil (1-month lag)

A linear regression using 59 monthly observations ($N = 59$) showed that Brent Crude oil prices, lagged by one month, significantly predicted sales orders ($p = 0.005$). The model explained 13.1% of the variance in order intake ($R^2 = 0.131$), indicating a moderate

positive relationship. This suggests that rising oil prices may be associated with increased demand for the case company's products one month later.

Regression analysis: Nickel price (2-month lag)

A linear regression using 58 monthly observations (N = 58) found that nickel prices with a two-month lag significantly predicted sales orders ($p = 0.009$). The model explained 11.5% of the variance ($R^2 = 0.115$) and showed a moderate positive relationship, indicating that rising nickel prices tend to be followed by increased sales orders two months later.

Regression analysis: EUR to CNY (0-month lag)

A linear regression analysis revealed that the EUR to CNY exchange rate was a significant predictor of sales orders ($p = 0.017$). The model explained 9.5% of the variance ($R^2 = 0.095$) and showed a moderate negative relationship, suggesting that a stronger euro is associated with lower order intake from China. A linear regression using 59 monthly observations (N = 59) showed that lithium carbonate prices, lagged by one month, significantly predicted sales orders ($p = 0.033$). The model explained 7.7% of the variance in order intake ($R^2 = 0.077$) and revealed a moderate positive relationship, suggesting that higher lithium prices are followed by higher sales orders.

Regression analysis: Copper (2-month lag)

A linear regression using 58 monthly observations (N = 58) found that copper prices with a two-month lag significantly predicted sales orders ($p = 0.045$). The model explained 7.0% of the variance ($R^2 = 0.070$) and showed a weak to moderate positive relationship, suggesting that a slight increase follows rising copper prices in sales orders.

Regression analysis: Exchange Rate EUR to USD (0-month lag)

A linear regression using 58 monthly observations (N = 58) found that the EUR to USD exchange rate at a 0-month lag significantly predicted sales orders ($p = 0.046$). The model explained 6.9% of the variance ($R^2 = 0.069$) and showed a moderate negative relationship, indicating that lower sales orders typically follow a stronger euro.

4.3.1 Multivariate Regression Analysis

A multivariate linear regression was conducted to examine whether a combination of macroeconomic indicators could jointly explain the case company's monthly sales orders. The model included six predictors: Brent Crude oil price (1-month lag), copper price (2-month lag), nickel price (2-month lag), lithium price (1-month lag), EUR/USD exchange rate (0-month lag), and EUR/CNY exchange rate (0-month lag). The six predictors were chosen because they showed correlation in the Pearson Correlation and regression analysis. The model explained 17.2% of the variance in sales orders ($R^2 = 0.172$), but the adjusted R^2 was only 0.069, indicating limited explanatory power when adjusting for the number of predictors. Additionally, the overall model was not statistically significant ($p = 0.151$), and none of the individual predictors remained significant when combined. Collinearity diagnostics revealed high multicollinearity among several variables, especially between commodity prices and exchange rates. This likely reduced the model's reliability, as overlapping predictors can weaken statistical significance and distort the results.

Multivariate Regression Analysis model 2

To improve accuracy and interpretability, a refined regression model was built using three variables with low multicollinearity and strong theoretical relevance: nickel price (a 2-month lag), Brent Crude oil price (a 1-month lag), and the EUR/USD exchange rate (a 0-month lag). The model was statistically significant, $F(3, 52) = 3.153$, $p = 0.032$, and explained 15.4% of the variance in sales orders ($R^2 = 0.154$; adjusted $R^2 = 0.105$). Although none of the individual predictors reached statistical significance ($p > 0.05$), their combined effect was meaningful, suggesting that interactions among macroeconomic indicators can influence sales orders even when single factors do not. All VIF values were below 5, confirming no serious multicollinearity. Overall, the refined model indicates that a combination of key indicators can jointly explain fluctuations in the case company's monthly sales orders.

Multivariate regression analysis model 3

An alternative refined regression model was tested using copper price (2-month lag), lithium price (1-month lag), and the EUR to CNY exchange rate (0-month lag) as predictors. Although this model avoided multicollinearity and showed acceptable residual behaviour, it was not statistically significant overall ($p = 0.072$) and explained only a small portion of the variance in sales orders (adjusted $R^2 = 0.072$). Compared to the first refined model, this version was less successful in capturing the variation in order intake and is therefore not selected as the preferred model for interpretation.

Multivariate regression analysis model 4

The fourth refined multivariate regression analysis was conducted using Brent Crude oil price (1-month lag), nickel price (2-month lag), and the EUR to CNY exchange rate (0-month lag) as predictors of the case company's monthly sales orders. The model was statistically significant, $F(3, 51) = 3.095$, $p = 0.035$, and explained 15.4% of the variance in sales orders (adjusted $R^2 = 0.104$). Although none of the individual predictors were statistically significant on their own, the model showed a meaningful combined effect. The Durbin-Watson value of 1.464 indicated no serious autocorrelation, and all VIF values were below 3, suggesting no multicollinearity issues. This model presents a balanced and statistically supported view of how key macroeconomic indicators, with appropriate lags, may collectively influence customer ordering behavior.

4.4 Research Findings from the second business line in the case company

To strengthen the analysis and test the consistency of results across different business lines, the same methods are applied to a new dataset covering sales orders from a different business line. This helps to determine whether the same or different macroeconomic variables correlate with sales orders, as in the previous analysis. Although the original study focused on large orders exceeding €500,000, this threshold could not be applied here due to the limited number of large orders in this business line. Instead, the analysis uses the total monthly sales order value regardless of order size. The structure of this analysis follows the previous study, starting with Pearson correlation tests between monthly sales orders and selected macroeconomic indicators.

These include commodity prices, key currency exchange rates, and other relevant economic indicators, each tested with 0-, 1-, 2-, and 3-month lags. The first step is to study the relationship between the business line's monthly sales orders and commodity prices: gold, copper, silver, nickel, lithium, and iron ore.

4.4.1 Pearson Correlation Analysis of Commodity prices

Table 5: Pearson correlation results of gold, copper, silver, nickel, lithium carbonate, and iron ore (0–3 month lag)

Variable	Lag	r-value	p-value	Interpretation
Gold price	0-month lag	0.090	0.492	Not statistically significant
	1-month lag	0.171	0.197	Not statistically significant
	2-month lag	0.244	0.065	Not statistically significant
	3-month lag	0.222	0.096	Not statistically significant
Copper price	0-month lag	–0.165	0.206	Not statistically significant
	1-month lag	–0.096	0.470	Not statistically significant
	2-month lag	–0.066	0.624	Not statistically significant
	3-month lag	–0.034	0.801	Not statistically significant
Silver price	0-month lag	–0.318	0.016	**Statistically significant**
	1-month lag	–0.336	0.011	**Statistically significant**
	2-month lag	–0.240	0.072	Not statistically significant
	3-month lag	0.108	0.423	Not statistically significant
Nickel price	0-month lag	–0.148	0.260	Not statistically significant
	1-month lag	–0.119	0.371	Not statistically significant
	2-month lag	–0.139	0.297	Not statistically significant
	3-month lag	–0.151	0.263	Not statistically significant
Lithium	0-month lag	–0.137	0.297	Not statistically significant
	1-month lag	–0.130	0.326	Not statistically significant
	2-month lag	–0.165	0.214	Not statistically significant
	3-month lag	–0.184	0.171	Not statistically significant
Iron ore	0-month lag	–0.061	0.645	Not statistically significant
	1-month lag	0.037	0.779	Not statistically significant
	2-month lag	–0.068	0.611	Not statistically significant
	3-month lag	–0.077	0.568	Not statistically significant

Gold, Copper, Silver, Nickel, Lithium, and Iron ore (0–3-month lag)

The results from Pearson's correlation between sales orders and gold price were not statistically significant. For gold, the results are similar to the first test, showing that gold does not correlate with the case company's sales orders in either of the two business lines. The copper price results were not statistically significant, although they did show a correlation with the other business line at a 2-month lag.

Silver prices with a 0-month lag and with a 1-month lag were statistically significant, with a positive correlation, although a previous study with another business line found no correlation. With a 2-month and 3-month lag, the results were not statistically significant. Nickel and lithium prices did not show a meaningful relationship with sales in this business line, although a correlation was observed in the first business line. Iron ore did not correlate with sales orders in either of the business lines.

4.4.2 Pearson Correlation Analysis of Key currency exchange rates

Next, the study examined whether there is a statistically significant correlation between the case company's monthly order intake and key currency exchange rates with lags of 0, 1, 2, and 3 months, including EUR/USD, EUR/CNY, and EUR/INR.

Table 6: Pearson correlation results of key currency exchange rates (0–3 month lag)

Variable	Lag	r-value	p-value	Interpretation
EUR to USD	0-month lag	0.214	0.107	Not statistically significant
	1-month lag	0.197	0.138	Not statistically significant
	2-month lag	–0.064	0.632	Not statistically significant
	3-month lag	–0.106	0.432	Not statistically significant

EUR to CNY	0-month lag	0.046	0.732	Not statistically significant
	1-month lag	–0.050	0.712	Not statistically significant
	2-month lag	0.041	0.762	Not statistically significant
	3-month lag	0.061	0.650	Not statistically significant
EUR to INR	0-month lag	–0.336	0.011	**Statistically significant**
	1-month lag	–0.258	0.053	Not statistically significant
	2-month lag	–0.291	0.028	**Statistically significant**
	3-month lag	0.023	0.863	Not statistically significant

EUR to USD, EUR to CNY, and EUR to INR exchange rate (0–3-month lag)

For the EUR/USD and EUR/CNY exchange rates, none of the correlations were statistically significant, despite the correlation in the previous study; this was not the case in this business line. The EUR/INR exchange rate showed a negative correlation with sales orders at 0-month ($r = –0.336$, $p = 0.011$) and 2-month lags ($r = –0.291$, $p = 0.028$), both of which were statistically significant. The 1-month lag ($r = –0.258$, $p = 0.053$) was just above the 0.05 threshold, and the 3-month lag was not significant. These findings suggest that a stronger euro relative to the rupee is associated with fewer sales orders in the same month and two months later, indicating that exchange rate movements can have both immediate and slightly delayed effects on purchasing decisions.

4.4.3 Pearson Correlation Analysis of macroeconomic indicators

Table 7: Pearson correlation results of macroeconomic indicators (0–3 month lag)

Variable	Lag	r-value	p-value	Interpretation
ECB overnight deposit rate	0-month lag	–0.442	0.001	**Statistically significant**
	1-month lag	–0.422	0.001	**Statistically significant**
	2-month lag	–0.411	0.001	**Statistically significant**
	3-month lag	–0.054	0.688	Not statistically significant

US Federal Funds Effective rate	0-month lag	–0.445	0.001	**Statistically significant**
	1-month lag	–0.129	0.330	Not statistically significant
	2-month lag	–0.111	0.405	Not statistically significant
	3-month lag	–0.085	0.530	Not statistically significant
The Brent Crude	0-month lag	–0.241	0.068	Not statistically significant
	1-month lag	0.268	0.042	**Statistically significant**
	2-month lag	–0.148	0.268	Not statistically significant
	3-month lag	–0.175	0.192	Not statistically significant
PMI Eurozone	0-month lag	–0.080	0.642	Not statistically significant
	1-month lag	0.073	0.678	Not statistically significant
	2-month lag	0.110	0.534	Not statistically significant
	3-month lag	0.035	0.845	Not statistically significant
PMI Global	0-month lag	0.365	0.028	**Statistically significant**
	1-month lag	0.128	0.457	Not statistically significant
	2-month lag	0.049	0.778	Not statistically significant
	3-month lag	–0.005	0.978	Not statistically significant

The ECB overnight deposit, the US Federal Funds Effective rate, Brent Crude oil, and Purchasing Managers' Index (0–3-month lag)

There is a clear negative correlation between the ECB overnight deposit rate and sales orders in this business line from a 0-month to 2-month lag, but this correlation is no longer evident at a 3-month lag. This suggests that changes in interest rates can significantly impact customer decisions, possibly because higher rates make financing more expensive, resulting in fewer orders in the short term. The US Federal Funds Effective Rate and this business line's sales orders correlate with a 0-month lag at r = -0.445 and p = 0.001, which is a statistically significant negative correlation. The 1-month, 2-month, and 3-month lags are not statistically significant. There is a clear and immediate negative correlation between the US Federal Funds Rate and sales orders in this business line. This could be because changes in the US interest rate quickly affect global economic conditions, causing customers to hold back on orders.

Brent Crude oil with a 0-month lag result is not statistically significant. With a 1-month lag, the result was r = –0.268 and p = 0.042 (N = 58), indicating a statistically significant, albeit weak, negative correlation. The 2- and 3-month lag results were not statistically significant. In comparison to the first business line, which showed the highest correlation with Brent Crude oil, it was also with a 1-month lag (r = 0.371, a positive correlation); this business line shows a negative correlation also at a 1-month lag (r = –0.268, a negative correlation). This suggests that Brent Crude oil prices may affect sales orders with a 1-month delay. When oil prices rise, sales orders tend to decrease in this business line, which is the opposite of the first business line.

For the Eurozone Purchasing Managers' Index (PMI), none of the correlations with this business line's monthly sales orders were statistically significant. For the Global Purchasing Managers' Index (PMI), a statistically significant positive correlation was found at the 0-month lag (r = 0.365, p = 0.028), suggesting that global economic activity may have an immediate effect on this business line's sales orders. However, the correlations at longer lags were not statistically significant. This suggests that any impact of the Global PMI on sales orders is likely to impact within the same month rather than be delayed.

4.4.4 Conclusion of Pearson's correlation analysis results on the second business line

Table 8 below summarizes the macroeconomic variables that showed statistically significant correlations with the second business line's monthly sales orders; only the strongest correlated lag is included. Similar to the first business line, six variables were found to be significant; however, only Brent Crude Oil was consistent across both business lines, which highlights the variability in how different segments of the business respond to macroeconomic changes.

Table 8: Second business line Pearson correlation results – strongest correlations

Variable	Correlation (r)	P-value	Interpretation
The US federal funds effective rate 0-month lag	-0.445	0.001	Moderate negative correlation: As US interest rates increase, sales orders tend to decrease
The ECB overnight deposit rate 0-month lag	-0.442	0.001	Moderate negative correlation: As ECB rates increase, sales orders tend to decrease
The PMI Global Index 0-month lag	0.365	0.028	Moderate positive correlation: As global PMI increases, sales orders tend to increase
Silver 1-month lag	0.336	0.011	Moderate positive correlation: As silver prices rise, sales orders tend to increase.
EUR to INR 0-month lag	-0.336	0.011	Moderate negative correlation: As the euro weakens against the rupee, sales orders tend to decrease
Brent Crude oil 1-month lag	-0.268	0.042	Weak negative correlation: As oil prices increase, sales orders tend to decrease.

The Purchaser Management Index Global and this business line's sales orders exhibit a statistically significant positive correlation, with a 0-month lag ($r = 0.365$, $p = 0.028$). Higher interest rates (ECB and U.S.) are associated with lower sales orders, which is likely due to reduced investment activity or borrowing capacity. The EUR/INR exchange rate study found that a weaker euro against the rupee is linked to lower sales, possibly because it makes the services offered to the Indian market less competitive in price. Meanwhile, the positive correlation with the Global PMI suggests that global manufacturing activity influences demand for the case company's offerings. Unlike the first business line, metal prices such as nickel and lithium did not show significant correlations here, while silver emerged as a new relevant factor. This highlights how different product lines may respond differently to macroeconomic conditions, and individual analysis must be done across business units.

4.5 Regression analysis on the second business line

Regression analysis: The US federal funds effective rate (0-month lag)

A linear regression was conducted using 59 monthly observations ($N = 59$) to test whether the US federal funds effective rate (0-month lag) predicts monthly sales orders in the second business line. The model was statistically significant, $F(1, 57) = 14.076$, $p <$

0.001, indicating a strong relationship. The model explained 19.8% of the variance in sales orders (R^2 = 0.198), which is a meaningful effect for a single macroeconomic variable. The regression coefficient was statistically significant (B = –1.094, $p < 0.001$), and the standardized beta coefficient (β = –0.445) shows a moderate negative relationship. This means that higher US interest rates are associated with lower sales orders.

Regression analysis: The ECB overnight deposit rate (0-month lag)

A linear regression analysis was conducted using 57 monthly observations (N = 57) to investigate whether the ECB overnight deposit rate (with a 0-month lag) predicts monthly sales orders in the second business line. The model was statistically significant, $F(1, 55) = 13.331$, $p < 0.001$, indicating a reliable connection between ECB rates and sales. The model accounted for 19.5% of the variation in sales orders (R^2 = 0.195), which is a notable amount for a single economic indicator. The regression coefficient was statistically significant (B = –1.321, $p < 0.001$), and the standardized beta coefficient (β = –0.442) reflects a moderate negative relationship. This suggests that higher ECB interest rates are associated with lower order volumes.

Regression analysis: The PMI Global Index (0-month lag)

A linear regression was performed using 36 monthly observations (N = 36) to test whether the Global Purchasing Managers' Index (PMI Global, 0-month lag) predicts sales orders in the second business line. The model was statistically significant, $F(1, 34) = 5.234$, $p = 0.028$, suggesting a reliable relationship between global manufacturing activity and sales performance. The model explained 13.3% of the variance in sales orders (R^2 = 0.133). The regression coefficient was statistically significant (B = 1.138, $p = 0.028$), and the standardized beta coefficient (β = 0.365) shows a moderate positive relationship. This indicates that higher global PMI values are linked to increased sales orders in the same month.

Regression analysis: The Silver (1-month lag)

A linear regression was conducted using 57 monthly observations (N = 57) to assess whether silver prices (1-month lag) predict monthly sales orders in the second business line. The model was statistically significant, $F(1, 55) = 6.999$, $p = 0.011$, indicating that changes in silver prices are associated with changes in sales performance. The model explained 11.3% of the variance in sales orders ($R^2 = 0.113$). The regression coefficient was statistically significant ($B = –0.488$, $p = 0.011$), and the standardized beta ($\beta = 0.336$) indicates a moderate negative relationship. This means that higher silver prices tend to be followed by lower sales orders after one month.

Regression analysis: EUR to INR (0-month lag)

The exchange rate between the euro and the Indian rupee (EUR/INR) showed a statistically significant negative effect on sales order volumes. The regression model was based on 57 monthly observations and was significant, with $F(1, 55) = 6.979$ and $p = 0.011$. This suggests that changes in the exchange rate are meaningfully related to changes in sales. The model explained 11.3% of the variance in monthly sales orders ($R^2 = 0.113$), and the standardized beta coefficient ($\beta = –0.336$) confirms a moderate negative relationship. When the euro strengthens compared to the rupee, sales orders in this business line typically decrease.

Regression analysis: The Brent Crude oil (1-month lag)

The regression model reveals a statistically significant relationship between Brent Crude oil prices (with a 1-month lag) and the sales orders of the second business line, with a p-value of 0.042. The R^2 value is 0.072, meaning that oil prices can explain 7.2% of the variation in sales orders. The direction of the relationship is negative, as indicated by the standardized beta coefficient ($\beta = –0.268$). This suggests that when oil prices rise, sales orders tend to decrease slightly. The analysis is based on 58 observations (N = 58).

4.5.1 Multivariate regression analysis for the second business line

Three models are tested in the multivariate regression analysis to assess how well selected macroeconomic variables together explain the variation in the second business

line's monthly sales orders. The first model includes the ECB rate, silver price, and the EUR to INR exchange rate. These three variables show moderate correlations with sales orders but, according to the correlation matrix, are not strongly correlated with each other. The second model includes the US federal funds rate (0-lag), Silver (1-month lag), and Brent Crude Oil (1-month lag). It does not include the ECB interest rate, as it strongly correlates with the US rate and would cause multicollinearity. This model combines the effects of interest rates and commodity prices. The third model includes the ECB overnight deposit rate (0-lag), the PMI Global Index (0-lag), and Brent Crude Oil (1-month lag). This final model captures the influence of European interest rates, industrial activity, and oil prices.

Multivariate regression model 1

The model combines the ECB rate, silver price, and the EUR to INR exchange rate, explains approximately 27.7% of the variance in sales orders ($R^2 = 0.277$, adjusted $R^2 = 0.235$). The overall model is statistically significant ($p < 0.001$, $N = 56$). Among the variables, the ECB rate and silver price have significant negative effects on sales orders ($p = 0.001$ and $p = 0.022$, respectively), while the EUR-to-INR rate does not reach significance at the 0.05 level ($p = 0.092$). The beta coefficients show that the ECB rate has the strongest effect ($\beta = –0.533$), followed by silver ($\beta = –0.348$). There are no signs of multicollinearity, as all VIF values remain below 2.5.

Multivariate regression model 2

The ECB interest rate (0-month lag) and silver price (1-month lag) remained the same, and the EUR to INR exchange rate was replaced by Brent Crude oil (1-month lag). The second multivariate regression model includes silver prices (1-month lag), Brent crude oil prices (1-month lag), and the ECB overnight deposit rate (0-month lag) as predictors. The model is statistically significant, $F(3, 52) = 5.747$, $p = 0.002$, and explains 24.9% of the variance in sales orders ($R^2 = 0.249$), with an adjusted R^2 of 0.206. The sample size was 56. Among the predictors, only the ECB rate has a statistically significant effect ($\beta = –0.332$, $p = 0.016$), suggesting that an increase in the ECB rate is associated with a

decrease in sales orders. The effects of silver and Brent crude oil prices were not significant ($p = 0.116$ and $p = 0.341$, respectively), and their standardized beta coefficients were smaller. Multicollinearity is not a concern in this model, as all VIF values remain below 1.3. Overall, this model captures the influence of European interest rates and commodity prices, with the ECB rate emerging as the most relevant predictor.

Multivariate regression model 3

The third and final multivariate model studied how the US federal funds rate, Brent crude oil prices, and the EUR to INR exchange rate affect sales orders in the second business line. The regression was statistically significant, $F(3, 52) = 4.987$, $p = 0.004$, with a sample size of 56. The model explained 22.3% of the variance in sales orders ($R^2 = 0.223$). Out of the three variables, only the US interest rate had a significant negative effect ($p = 0.038$), suggesting that higher US rates are associated with lower sales. No signs of multicollinearity were detected.

4.6 Summary of the data analysis

In the analysis, the case company's sales order data over the past four years from 2020 to 2024 was compared with different variables such as commodity prices; gold, copper, silver, nickel, lithium, and iron ore, key currency exchange rates; EUR/USD, EUR/CNY, and EUR/CLP, and macroeconomic indicators; Brent Crude, interest rates (ECB and US), and PMI Eurozone and Global. All were studied with a 0-3 month lag, which means that it was studied if a change in the variable impacted the sales most immediately, with a 1-, 2-, or 3-month delay. The findings should also be viewed in the context of 2020–2024, when the COVID-19 pandemic may have affected both macroeconomic developments and the case company's order intake. Two business lines from the case company are the first, which focuses more on engineering and the ability to create a solution to the most complicated issues, and the second, which is more focused on selling a process and standardized products. The results also suggest that many variables likely reflect the overall economic situation rather than causing direct changes in sales orders

The results of the first business line were that there was a moderate positive correlation (r=0.371, p=0.004) with Brent Crude oil prices with a 1-month lag, meaning that as oil prices rise, the company's orders tend to increase one month later. There was also a moderate positive correlation (r = 0.339, p = 0.009) with Nickel, with a 2-month lag, which means that as nickel prices rise, sales orders tend to increase 2 months later. With the EUR to CNY exchange rate, a negative correlation was observed (r = –0.327, p = 0.012), which likely reflects broader macroeconomic developments affecting investment activity rather than a direct pricing effect in the Chinese market. Lithium (r=0.278, p=0.033) and Copper (r=0.265, p=0.045) show a 1-month and 2-month lag, respectively, indicating that when these metals increase, sales tend to increase slightly as well. Lastly, the exchange rate EUR to USD 0-month lag (r = 0.263, p = 0.046) indicates that a stronger euro against USD tends to reduce sales orders.

The second business line also correlated with six variables, but they were all different ones, except the Brent Crude oil 1-month lag. Instead of a positive correlation, a weak negative correlation was observed (r = –0.268, p = 0.042), indicating that as oil prices increase, sales orders tend to decrease. In the second business line, the strongest correlation was observed with the US federal funds effective rate 0-month lag (r = –0.445, p = 0.001) and the ECB overnight deposit rate 0-month lag, indicating that as US and ECB interest rates increase, sales orders tend to decrease. The Purchasing Managers' Index (PMI) globally correlated moderately positively with sales orders (r = 0.365, p = 0.028).

In commodity prices, Nickel, Lithium, and Copper correlated with the first business line, but not with the second business line. In the second business line, the only mineral that correlated with the sales orders was silver, with a 1-month lag (r = 0.336, p = 0.011). As silver prices rise, the sales orders also tend to rise. In the first business line, the EUR to USD and EUR to CNY exchange rates correlated with sales orders; in the second business line they did not, but the EUR to INR exchange rate with a 0-month lag did (r = –0.336, p=0.011), which means that as the euro weakens against the rupee, sales orders tend to decrease.

In both business lines, the six variables that correlated with the sales order in each were also subjected to a regression analysis and a multivariate model was conducted. The regression analysis reported the percentage impact that the variable has on sales orders, and different multivariate models were used to determine which combination of variables has the most significant impact on sales orders. In the first business line, it was the combination of nickel price (2-month lag), Brent Crude oil price (1-month lag), and the EUR to USD exchange rate (0-month lag), the model was statistically significant, $F(3, 52) = 3.153$, $p = 0.032$, and explained 15.4% of the variance in sales orders ($R^2 = 0.154$). Although none of the individual predictors were statistically significant on their own ($p > 0.05$), their combined effect was meaningful.

Also, another combination explained 15.4% of the variance in sales orders (adjusted $R^2 = 0.104$). That multivariate regression analysis was conducted using Brent Crude oil price (1-month lag), nickel price (2-month lag), and the EUR to CNY exchange rate (0-month lag) as predictors of the case company's monthly sales orders. The model was statistically significant, $F(3, 51) = 3.095$, $p = 0.035$. The similarity is likely due to the fact that the EUR to USD and EUR to CNY exchange rates are similar. In the second business line, the model combined the ECB rate, silver price, and the EUR to INR exchange rate, and it explained about 27.7% of the variance in sales orders ($R^2 = 0.277$, adjusted $R^2 = 0.235$), and the model was statistically significant ($p < 0.001$, $N = 56$).

5 Research Findings from the qualitative study

This section answers the second research question: *What factors drive customer decision-making in large industrial project investments?.* The chapter first introduces each sales situation and its key characteristics, and then presents the main themes that emerged from the interviews. The qualitative findings help identify critical success factors in B2B project sales and offer insights into the human and organizational sides of the sales process.

5.1 Introduction of the interviews

An overview of the interviews is shown in Table 9. Below the table, each interview is introduced in more detail. Table 9: Overview of the studied cases in interviews.

Partnership	Position	Location	Outcome (Won/Lost)	Deal Value	Interview duration	Years in company
A	Account Manager	Wisconsin, USA	Lost	~2 MEUR	30 min	4,5
B	Project Manager	South Africa	Won	~10 MEUR	45 min	12
C	Site Account Manager	Montreal, Canada	Lost	665 000 EUR	45 min	3
D	Technical Support Engineer	Sydney, Australia	Lost	1,25 MEUR	50 min	15
E	Account Site Manager	Whyalla, Australia	Won	12 MEUR	45 min	14
F	Product Manager	Australia	Lost	1 MEUR	60 min	8,5
G	Senior Account Manager	Kentucky, USA	Won	4 MEUR	60 min	6
H	Senior Sales manager	Aljustrel, Portugal	Won	820 000 EUR	35 min	24
I	Technical Sales Support	Chile	Won	8 MEUR	30min	25
J	Senior Manager	Mexico	Won	20 MUSD		8,5
K	Site Account Manager	Wisconsin, USA	Lost	800 000 EUR	60 min	7
L	Project Manager	Sydney, Australia	Won	20 MAUSD	50min	13
M	Site Account Manager	Sweden	Won	-	45min	32
N	Project Manager	Brazil	Won	4,7 MEUR	60min	17
O	Product Manager	Australia	Lost	~1,5 MEUR	45min	8,5

Partnership A: A 2-million-euro deal lost in the United States

The company’s products, valued at approximately two million euros, were reported lost in December 2024. It is noteworthy that the customer already had several units of this equipment installed by the case company at their other plants, which suggests a potential preference for consistency in using the same supplier. The account manager responsible for this partnership had worked at the case company for 4.5 years. In the interview, he explained that a bidding process was conducted for the equipment and that he prepared the quotation in collaboration with a colleague. They were the only two representatives from the company who interacted with the customer. It took them approximately 5–6 weeks to compile the offer, which was submitted in October 2024. The customer’s decision-making process took another six weeks. According to the interviewee, the customer found the quotation to be sufficiently detailed.

It was noted that the case company does not conduct much business with this particular customer, as they typically work with other suppliers for their parts and tend to consider the case company's services expensive. The case company is currently trying to rebuild the relationship. And whenever the company submits a quote, it tends to be the highest. There were four bidders, and the case company’s quote was the highest, 200,000 euros higher than the next one. The account manager stated that he has good relationships with the local people at the customer’s plants and with the local planners, and that he meets them face-to-face. However, the purchasing decision was handled by corporate representatives based in Pittsburgh. He had not met the key decision-makers in person and described the communication with them as more on a superficial level. In his view, the quality of communication and cooperation had an impact on the customer’s final decision. The account manager believed that the key challenge was the customer’s internal financial considerations. He did not think that the product itself was a deciding factor, as he considered it technically solid, but felt that the price was too high. Eventually, the customer went forward with another supplier.

In reflecting on what could have been done differently, he mentioned that being more cost-sensitive and building a closer relationship with the customer's key decision-makers could have made a difference. He emphasized the importance of engaging with those stakeholders earlier in the process. In his opinion, the lack of a relationship with the decision-makers limited their chances, and more time to present and sell the product might have improved their position. His final remark was that while people can influence decisions, the key decision-makers in this deal were cost-sensitive, and developing a stronger relationship with them would likely have helped.

Partnership B: "Trust was the key to being awarded with this project" – how the case company secured a 10-million-euro deal in South Africa

The project manager at the case company was interviewed about the sale of a product to a customer for approximately 10 million euros in South Africa. The deal was awarded to the case company at the end of 2024, following one year of negotiations and two years since the initial conversations began. The customer is a government-owned company that also holds private investments, and its decision-making process is slow and complex, involving numerous formal protocols.

There were three key decision makers on the customer's side. One of the decision-makers had a negative view of the case company because, in the past, the company had closed its division in South Africa, making it harder for customers there to get support, which negatively affected the customers' trust in the region. Now the case company has returned to South Africa and is increasing its presence there, but it takes time to build trust. The lesson learned was that when closing operations in a region, the long-term consequences of losing the trust of the operators in that region must be taken into account. This example underscores the importance of trust, a key theme of this study. It takes time to build trust, and it can be lost very quickly; rebuilding it takes time. As seen in this example, years later, the customer still recalled the negative experience when

support was unavailable due to the company's withdrawal. This demonstrates how trust, once lost, can be challenging to regain.

There was a high probability that the case company would secure this deal, because the original product, whose key components needed replacement, was originally supplied by the case company. Competitors did not have the same expertise as the case company: the pieces were not only needed, but engineers were also required to inspect and improve the machine. This was risky for the customer because they have three machines from the case company, all of which are working at full capacity. Therefore, when the components are changed and one of the machines is stopped, the customer will lose production. Therefore, the customer wanted to choose someone they deemed trustworthy and reliable so that the output would be down for as short a time as possible, thereby minimizing the losses.

The case company positions itself as a premium brand, and especially in high-risk situations, customers are often willing to pay a bit more. The project manager stated that customers often turn to the case company when the project is large, complex, and has not been done before, because although some of the case company’s competitors may be able to do it cheaper, it could also be riskier. Before winning this project, the case company had completed a smaller project with the customer that included a shutdown, which helped establish the customer’s trust and set a strong foundation for this project. Another key takeaway from this is the importance of not underestimating the significance of small projects, as they can serve as opportunities to build trust and open doors for larger projects.

Partnership C: Lost case in Quebec, Canada

There was a lost opportunity with a customer in Quebec, Canada, where critical components needed to be replaced. The total value of the offer was approximately 665,000 euros. Despite the project being considered a high probability of winning, the

case company lost the order in October 2024 to a competitor, primarily due to pricing and limited opportunities for negotiations. In 2024, the customer prepared for a shutdown, and after earlier partial orders, an opportunity for a more substantial deal opened. The case company sent its quotation, but because of the significant price gap with competitors, there was no opportunity for negotiation. Although the quotation was sufficiently detailed, the price included room for negotiation, something that ultimately worked against the case company. The strategy of leaving room in the price for the negotiations did not work in this case, because the price was higher than what the competitors had offered, which led the customer to exclude the case company from further negotiation rounds.

Communication with the customer was primarily conducted via email and phone calls; the customer did not wish to have a visit to their site, which made it challenging to establish a deeper relationship. The Site Account manager responsible for this customer stated in the interview that the pulp and paper industry is very price-sensitive, and they operate with annual budgets that are usually smaller than those in the mining sector. In the pulp and paper sector, investments are often made in smaller pieces, and there is not always the budget to choose the better-quality offer that would last longer if the price is much higher. The follow-up was consistent, but the delayed quotations also reduced competitiveness. The customer ultimately divided the order, awarding the more expensive and critical components to the competitor. The case company supplied the less valuable parts, which suggests some level of trust from the customer towards the case company.

Partnership D: The case company lost approximately 1.3 million euros in the case in Australia because the customer decided to do it themselves

The case company lost approximately a 1.3-million-euro deal when the customer in Queensland, Australia, started replacing the equipment they had, and they did not choose the case company for it, even though six out of the nine existing equipment units

were supplied by the case company. The case company got the order for one, but for the next the customer said they were too expensive. The case company initially offered a cheaper option, which was two-thirds of the final offer price, by sourcing products made in China. However, because the customer had a negative experience with another supplier that used products made in China, they refused this option, which ultimately led to a higher price. The case company ultimately lost the orders because the customer performed in-house reverse engineering and utilized local suppliers to manufacture the parts internally.

The decision-making process, led primarily by the respected on-site engineer and finalized by senior management from both ownership parties of the customer company, was lengthy and complex, lasting almost three years. Previously, when the customer contacted the case company that their offer was too expensive, and the case company was too slow in their response, which led the customer further away from them. As a result, it is harder to get them back once they have started doing it themselves. Despite the lost opportunity, trust, relationship quality, and communication between the two parties remain strong. Trust was built previously when products produced in India had some issues, but the case company promptly addressed the situation, which helped build trust and communication between them. The customer remains very brand loyal to the case company, and they did not explore any other companies; instead, they decided to do it themselves.

Despite high-quality technical documentation and regular contact with the customer's maintenance engineer, the case company was ultimately perceived as too expensive. But even more importantly, it was the customer's strategic intent to build local manufacturing skills. They conducted the engineering in-house and utilized local suppliers to manufacture the equipment. The first one was more expensive than buying directly from the company, but when they repeated it, the price became cheaper. Producing locally also gave them considerable control over the process. Having completed the costly initial engineering and modeling, the customer is now positioned

to replicate the parts independently at a lower cost. Therefore, in the future, when the equipment needs to be replaced again, it will be cheaper for them to do it themselves. This makes it increasingly difficult for the case company to win back customers for that product line, as they can now do it cheaper themselves. There is other equipment that the case company can sell to them, and the relationship is still strong between them. The customer's strategic goal of developing local manufacturing capabilities was central, and their decision was not solely based on price or quality, but on achieving long-term self-sufficiency and control.

Partnership E: 12-million-case won in Australia

The case company won a 12-million-euro deal in Australia by replacing equipment to enhance production. The customer had equipment from the case company that was purchased in 1965, and the case company has been selling spare parts to it ever since. The case company suggested replacing the equipment with a new one that would improve efficiency and provide better quality, use less fuel, and maintain better temperatures, among other benefits. The person responsible for this customer has been in contact with the customer since 1998, which has been an important factor in building the relationship. The relationship with the customer has been long-standing, and there is a high level of trust.

Additionally, there is an existing relationship with all the key decision-makers. The customer visited the United States to see reference installations and got feedback from other customers, and they studied the equipment, which added to the customer's confidence in the project. According to the interviewee, the two main reasons the customer chose the case company were its technical capabilities and the strong relationship between the parties. There were many face-to-face presentations, and the communication had a significant impact on the customer's decision. With technical expertise and reference cases, the case company was able to demonstrate the improvements that this update would bring to the customer.

The advantage in this deal was that the customer was very brand loyal to the case company and had not explored any other companies. The lesson was to be patient, as it took more than two years for the customer to make a decision. At some point, the discussions even stopped, but by persisting, a conclusion was finally found, although the price negotiations took a very long time. The account manager responsible for this case says that he believes the negotiations were successful because the right people were brought in at the right time, and he ensured he had the right support. The keys to success were utilizing the expertise within the company and leveraging the brand's reputation.

Partnership F: Lost case worth 1 million euros in Australia from three perspectives

The introduction of this partnership differs from the rest, as in other only one person from the case company was interviewed. However, this example includes two interviews from the case company and one from the customer's perspective. The first person interviewed was the Product Manager, the second person interviewed was the key contact person of this deal, and the third person was the responsible person from an engineering company that made the recommendation to the customer, which company to choose. They all bring their unique perspective to this example and reveal more information.

Partnership F(1): Interview with the Product Manager

The case company was selling equipment to a customer in Australia; they had won a fair bit and lost a few, including a deal worth €1 million. Their strategy with this equipment has been to source it from Turkey and China, where it is much cheaper, and then ship and sell it to the US, Canada, and Australia. The feedback was positive from the customer until they announced that the case company had not secured the deal. The responsible person does not believe they lost the deal due to the price, as the same pricing formula has worked well in other cases. It has been challenging to obtain feedback from the customer after the deal was lost, and therefore, it has been challenging to determine

why the deal was lost. The case company does not have a close relationship with the customer. The communication was via email, and there have been a few visits to the customer's site. The customer reached out to request a quote, but since then, there has not been much follow-up. Additionally, there have been two previous delays, which may have impacted the customer's trust in the company's ability to deliver on time.

Partnership F(2): Interview with the key contact person

The equipment that was being sold in this deal is no longer being marketed; it is very old, and most people are unaware that the company still has it. They were efficient and fast in making the quotation; it took only three weeks. There was a very close personal relationship with the general manager of the customer's company and the key contact person of the case company. He believed that the technical aspect was good in the offer, but lead time and price were the reasons why they were second. According to him, in Australia, there are high standards, and customers will usually take the company recommended by an engineering company. According to him, this deal was lost simply because they had not been in it from the beginning, and all the prework had already been done because the engineering company had started with one competitor and had already created the drawings and 3D models in collaboration.

He highlighted the importance of customer relationships. In mining, there can be 15 years of exploration, and the customer has been working on that project for 15-20 years before any construction begins. It is important to establish relationships early, as when mining operations begin, they can incur expenses ranging from a couple of million dollars to a billion dollars. With rising gold and copper prices, some customers are attempting to extract them from the ground as quickly as possible, which highlights the need to understand the factors influencing their interests from a mineral economics perspective. It is important to understand what the customer prioritizes, which varies depending on each project; this can include factors such as delivery time, technological solution, price, warranties, and turnkey solutions, among others. He presented an interesting yet simple tool: a picture of the customer's organization chart, which is

colour-coded to indicate relationships between individuals and the case company, facilitating better management of those relationships. He emphasized the importance of fostering more and better relationships with customers, particularly with decision-makers.

Partnership F(3): Interview from the customer's perspective

The interview from the customer perspective was conducted with the engineering company, which selected the winner of this contract on behalf of the customer. According to him, the equipment was always meant to be updated; they developed technical requirements and commercial conditions, and asked for a quotation from five different companies, from which they shortlisted two: the case company and the company that was later awarded the deal. According to him, the case company was not chosen because it did not best suit the criteria.

Most of his communication had been via email, a few calls, and a Teams meeting; he was not at the site when the key contact person visited it. According to him, the communication did not impact his decision in this case, although he thinks that, in general, it is very important. The communication was good, all questions were answered without delay and with detailed responses. According to him the communication already in the quotation part gives him the idea of how the relationship would be going forwards, for example if they are considering a company and they are answering questions slow and do not include enough detail, then the risk of them losing the deal increases, but that does not apply if the company is seeking for answers but responding otherwise. "Reliability, availability, response time, and support matter. " His advice was that, in general, face-to-face time can be valuable, and he encouraged always, if possible, to present the offer face-to-face. Additionally, according to him, trust is valuable and essential for establishing a good relationship, and the case company, compared to its competitors, is one of the better ones.

The delivery time was not as good as some of the alternatives. A very interesting technological reason was that the case company's solution required a significant amount of electricity, and since the site operated on generators, it would have consumed approximately one-fifth of the site's electricity. That was a problem because the customer would have had to update its generators for them to use that solution, and that impacted the decision. Additionally, another issue for the customer was that it had not been tested in Australia, but rather in China. Another very good explanation was that a typical mine usually runs for 25-30 years with a 5-million-ton production per year, but this mine was smaller and did not operate at full capacity, with a life expectancy of only about 10 years. Therefore, durability was not as high as it usually would have been, and price played a more critical role. According to him, they used a scale of 20 criteria to assess each tenderer, and the criteria depend on a mine. According to him, the reasons why the case company was not chosen were as follows, in order of most important to least important: pricing, delivery time, high electricity usage, system complexity, and the absence of preassembly of this equipment in Australia.

Partnership G: example of a successful pulp and paper industry deal

The case company sold equipment to a customer in the pulp and paper industry for a total value of € 4 million. There has been a long-standing relationship and history with this customer. The component sold needed to be replaced, and although the company's price was higher than that of its competitors, it remained within an acceptable range. The offer also included strong warranty terms. The customer can justify the decision with a proven history, and one of the key reasons was that the customer chose the case company because of the confidence that comes from working with a large, well-established supplier. The customer believed that if something were to go wrong, the case company was "big enough to be sued," which offers an extra layer of security and works as insurance in practice. A large company is seen as more capable of handling issues, offering support, and fulfilling legal or financial obligations, unlike smaller companies that might struggle under such pressure and can even go bankrupt if sued.

The decision-making process took two years and involved more than ten face-to-face meetings. The key decision-maker on the customer's side has worked for the company for a long time and was already well-known to the case company's team. According to the interviewee, communication was one of the most important contributing factors. The Senior Account Manager also highlighted that quality and delivery time were critical, especially given that the case company positions itself as a premium supplier, meaning the quality must match the price.

Partnership H: How previous success cases and regular inspections brought a new deal in Portugal

The case company has a strong relationship with a customer in Portugal and had previously secured a € 35 million deal with them two years earlier. That project was delivered successfully, which further strengthened the customer's trust. There has been close communication between the companies, including regular on-site inspections. During one of these routine inspections, the case company identified damage to a critical component and informed the customer that the part should be replaced, as its failure would lead to a complete production shutdown. A quotation was submitted, and the customer made a decision within approximately one month. There were three key decision-makers on the customer's side.

Due to the shutdown risk, time was of the essence, and both a swift response and a short delivery time were critical. Additionally, a lifetime warranty and a reasonable price were likely key reasons why the case company was awarded the deal, valued at approximately 800,000 euros. Other important factors included the customer's high level of trust, close and regular communication, and the offer's inclusion of continued inspections and support during the installation process. It was also agreed that if the customer encountered issues, the case company would provide reliable after-sales support.

The interviewed Senior Sales Manager emphasized the importance of proactive support, helping the customer even when there is no immediate commercial gain. In his view, this type of long-term support fosters trust and strengthens the relationship, which in turn supports future business endeavors. He believed that the strong communication and collaboration between the companies played a significant role in the outcome. Interestingly, the case company does not manufacture the specific equipment involved, and one of its own suppliers, who produces the equipment, was also a competitor in this particular deal.

Partnership I: 8-million-euro deal won in Chile

The case company won a deal worth 8 million euros in Chile in Q1 2025, despite the competitor's offer being 50% lower. The interviewee was a technical sales support professional who works closely with the sales account manager. The opportunity originated in 2024, and the customer's decision-making process lasted approximately six months. The customer is a large and important client that purchases various types of equipment from the case company. The relationship with the customer is strong across different departments. The case company actively maintains contact with multiple levels of the organization, including good relationships between top management on both sides. A variety of communication channels are utilized, including WhatsApp and face-to-face meetings. Regular site visits are also emphasized as critical for understanding the customer's needs and identifying opportunities early. The site account manager visits the plant frequently and proactively inquires about upcoming needs, as customers often reach out too late.

The customer chose the case company due to its fast delivery times and high product quality. Their operations require the production of 30,000 tons per day, and they are unwilling to take risks that could jeopardize output. The customer had previously tried using Chinese suppliers but was unsatisfied with the results and is now focused on reliability over cost. Although the customer generally values the relationship, feedback

questionnaires typically reflect moderate satisfaction (grades 6–8 out of 10), primarily due to occasional delivery delays and quality issues. Since the case company is positioned as a premium supplier, the customer expects consistently high quality delivered on time.

Partnership J: 14-million-dollar deal won in Mexico with innovative water recovery technology

The case company won a deal worth $ 14 million USD in Mexico, with an additional $ 4 million USD potential for this year and $ 25 million USD potential for next year. Water scarcity is a major issue in Mexico, especially for this customer located in the middle of the desert. The case company offered a technological solution for water recovery and re-use. In Northern Mexico, many customers are facing similar challenges related to water. This situation, combined with the case company's innovative technology, created an opportunity to apply a blue ocean strategy, which involves creating a new, untapped market space with no direct competition. The offer clearly demonstrated tangible added value to the customer. The customer's top management made the decision, but various departments played a key role in gradually advancing the project. The decision-making process took one year. A critical success factor was having all teams aligned and sending a clear message to the customer throughout the process. The customer's primary risk management tool is the contract, which includes various clauses. For risk mitigation, it was also crucial that engineers from both the case company and the customer collaborated to ensure alignment on the technical solution.

There was very strong communication throughout the project. The case company had direct access to the decision-makers and held weekly Teams meetings, regular follow-ups, and in-person meetings in Mexico. One of the most important factors was the role of the Site Account Manager, who helped transmit the case company's message and build trust with the customer. The Senior Manager from the case company who was interviewed listed several reasons why the case company was selected for this project:

its strong reputation in mining solutions, brand value, the suitability of the solution for the customer's water recovery needs, trust in both local and global teams, a strong technical-commercial proposal, and the openness and flexibility to adjust commercial terms. The fact that the customer is interested in doing new projects with the case company is a sign of satisfaction. It was also important that the case company could offer a full turn-key solution. In addition, the capability to provide guarantee documentation further increased the customer's trust in the company.

According to the Senior Manager, the lessons learned from this deal include the importance of thorough preparation using accurate and confirmed process data, as well as the need to carefully observe and understand the customer's plans. His final comment was: *"Everyone in our company plays an important role in project success. It is important to be aligned, transmit the message, and prepare a solution that is suitable for each project."*

Partnership K: Lost deal in the USA, due to lack of trust

The site account manager responsible for this customer at the case company was interviewed about a lost deal. The lost deal was in Wyoming, USA, with an estimated value of approximately € 800,000. There was a delay in pricing (two months), and the customer had previous negative experiences with the case company that impacted the decision. The components the customer wanted to buy were critical for their shutdown, and the customer did not trust that the case company would deliver them on time. Six months prior to this, the case company accidentally shipped the parts to the wrong location, which damaged the customer's trust in the company's ability to provide parts on time. Delay in the shutdown can be very expensive for the customer, so they did not want to take any risks. This is an important example because, in many instances where a shutdown was included, the customer chose the case company because they trusted it more than its competitors to deliver everything on time. This shows how failures impact customers' trust and can have a severe negative impact for a long time.

The decision-making process took one and a half years. The decision-maker at the customer's company had been directed by the upper management to seek alternative suppliers to the case company. The customer asked for a proposal, and the case company provided it with a two-month delay, but it was sufficiently detailed. Negotiations started where the customer informed about the critical nature of this delivery and their concerns based on prior performance. The offer was redone based on this information, and the supply was changed to domestic, and delivery incentives were added. The customer is considered a high-value target, so the site account manager had direct contact with a senior executive to obtain the necessary changes to the proposal. The case company would have been a domestic supplier in this instance, which makes the logistics significantly less risky and smoother. The case company also offered incentives and penalties for late parts, but that was not enough. According to the site account manager, there was nothing more they could have offered outside of offering to pay the damages that would have been in the part was not there on time. Offering to pay for the loss the customer incurred due to a delayed shutdown could be millions, which is why it was ultimately not possible to do so. The customer's risk management was to avoid doing business with the case company.

The communication with the customer was 70% via email and 30% by phone. The territory where the customer is does not have a site account manager for this site, so the customer is visited by the case company 2-3 times a year. According to the site account manager, the area where the customer is located does not have the proper sales coverage it deserves, and the current level of sales coverage is inadequate. In this instance, the communication was not lacking, because it was outlined specifically what would be done to get the best possible outcome; the prior history was a more determining factor than the communication.

According to the account site manager, there are some customers for whom the case company has not performed well in the past, and this has tarnished the relationship, making it very difficult to repair. The area is an iron market where price is a very

important factor, and the case company is not the cheapest, which plays a significant role in their success. The critical components were designed in the 1950s, so they are no longer intellectual property and are treated as commodities. This means that competitors can enter the market with the same product at a lower price, making the competition more price-dependent. Some competitors that are doing better have better relationships with their customers. For example, local suppliers often employ people who the customer's employers have grown up with and built lifelong relationships with. Another hindering factor in the relationship with the customer is that union presence is very strong in the area, and the case company does not have a union, which means that the case company cannot sell any service work. When work needs to be done on any equipment, the priority order is in-house expertise, and if that is not possible, then they must hire union workers. The company's reputation for safety is highly regarded, and customers value and recognize it. For example, there was a very dangerous union job, and they utilized the case company as an advisor to help get the job done safely.

The main reason for this deal's failure was the previous failure, where the customer had ordered a simple part, and the supplier was late on the delivery. The vendor is often late, and they have not found a better source for this part. Then they had an engineer draw the other part, but the drawings were confusing, which led to a mistake. Then the part was supposed to be flown into the US during the night, but the logistics of the case company decided to ship it to a warehouse in Europe, where it had a three-day truck drive to the warehouse. During this time, the communication was difficult because of different time zones.

Partnership L: 20 million AUSD deal won in Australia

The customer had a 20-year-old piece of equipment that needed to be replaced; the deal was worth close to $ 20 million Australian dollars. The deal was awarded in March 2023, and before that, there were two years of discussions, and initial discussions started already three years before. The case company has supplied them in the past with a good

record. According to the project manager, pricing is always a challenge, but in this deal, the company found a good supplier and was able to offer a competitive price. The legal negotiations went back and forth for months, but ultimately, an agreement was reached. The customer also has a very thorough risk mitigation system and a comprehensive tool to find out what the risks are.

There are close relationships between the companies on multiple levels. The site workers spend weeks at a time at the customer's site, but the close relationship extends to higher levels as well; for example, the Vice President of the case company has been visiting the customer's management. During the negotiation process, numerous face-to-face meetings were held. The project is very complex, so the case company flew the customer to the United States and Malaysia to see examples of the project, thereby building the customer's confidence in the case company. According to the project manager of the case company, communication and trust were 100% major elements in winning this deal.

Several key lessons were identified in the deal, including the importance of having a diversified supplier base to avoid relying on a single source. Quality issues were identified as critical, highlighting the need for the case company to strengthen its internal quality team to ensure that supplier outputs meet company standards. Although third-party inspections have been used, the interviews suggest that more in-house quality staff are needed. In addition, pricing should be carefully managed due to the current market volatility. Several key factors influenced the customer's decision to proceed with the investment. A replacement was necessary, and the case company's previous experience with the customer played a significant role. The decision was also supported by strong internal collaboration across teams, with extensive effort put into presentations and technical reports. Although the case company was not the cheapest option, its reputation for delivering high-quality products, a strong brand, and reliable delivery times was a significant factor. Personal trust and confidence in the team's ability to manage a complex project, along with effective communication throughout the process, were also seen as crucial.

Partnership M: Strategic partnership with the customer in Sweden

There were three examples referred to me with the same customer in Sweden, where the values of the orders were between 500,000 and 800,000 euros. The case company works very closely with the customer, and they have almost daily face-to-face meetings. The customer shuts down production every year for two weeks when they have a large amount of work to be completed; any extension of the shutdown is very expensive. The customer and the case company hold several meetings together to plan strategically for 2-3 years ahead.

The case company has been late with the customer in the past, but it has not affected the customer's trust in the long term. The case company also has a great reputation for quality, but a few times, the quality has not been the best. But according to the site account manager, it is okay to fail sometimes because the competitors fail with those same parts. Problems with quality are rare for strategic parts, as they undergo multiple quality checks at various stages, and in some cases, local personnel inspect the quality on-site.

The communication with the customer is great and, on many levels, they trust the case company. According to the site account manager interviewed, it is vital to be truthful because everyone knows everyone, and if you lie, you will get caught and you will be gone. Every possible competitor is knocking on the customer's door, so if the case company fails with something, it must manage and repair the issue. The site account manager has 32 years of experience working in the company. According to his experience, helping the customer when they are in the midst of a crisis can strengthen the relationship even further. The case company and customer hold regular meetings to discuss safety, during which the customer shares any new developments on the site. These meetings are important because a lot of information is shared there. The case company also reports in the customer's systems.

A topic that was recently discussed with the customer was know-how, because the case company has the capabilities to calculate, simulate, and predict when parts are worn out. The case company has extensive resources in engineering, calculations, safety, and other areas, while some competitors cover only certain aspects, the case company is the only one to cover all of them. The case company has done a great deal for the customer, and the customer views them as a stable partner. Instead of passively waiting for orders, the case company actively plans the future development of the site in a strategic partnership with the customer, which has been very valuable for the case company. Similar strategic partnerships should be built with other customers as well.

Partnership N: Excellent project management is the best seller for getting new projects

A highly experienced project manager from Brazil was interviewed, who has been with the company for 17 years. The deal we discussed was worth 4.7 million euros, and this interview focuses on it from a project management point of view to bring a different and new perspective. The project was technically challenging, and the customer was in Canada, which means that everything was done according to the very high Canadian standards. Canada also has harsh weather conditions that needed to be taken into account. Logistics in this deal were challenging because parts came from different areas of the world, such as Malaysia, the United States, and China. At the time of the project, the Suez Canal was blocked, which created a significant geopolitical challenge.

The customer’s operation had to be shut down to replace the equipment, and the time window was very short. The contract was made so that if the case company is late, it benefits the customer because then the case company must pay them, so the case company did not want to be late. Risk management was important in this project, for example, one very large piece of equipment had to be split into four parts so that it could be transported, but there was a risk that once the pieces arrived at the customer, they would not fit together anymore if they bent or broke, so the engineers designed a device

to protect the products in shipping. One component was not on time because one vendor had lied, and that had to be managed, and it was managed in a way that did not cause any disruption to the customer.

Communication was the key in this project. There was an internal kick-off meeting with everyone involved in the project. The team members were critical, and the project manager had chosen a mix of juniors and more senior, experienced members to ensure diversity. This was part of his strategy to mentor and coach the juniors, helping them grow. The team had weekly meetings that always included the following topics: engineering, quality, procurement, logistics, and field service.

Approximately five years before this project, the case company experienced issues with missing materials and quality, which left the customer hesitant to work with them. With this project, the case company got a new chance to build trust, and because this project has been successful, it has opened new doors for new projects. Therefore, excellent project management can be the best way to build trust.

Partnership O: Lost deal in Australia

The customer had a large equipment from the case company, and a few years ago they purchased a large part of it, but the customer was concerned about misalignments and the base, so for years they kept the part but did not install it. Then they decided that it is better, instead of replacing parts inside the equipment, to replace the whole thing. The value of this deal would have been 1,5 million euros to 2 million euros. The competitor for this deal was a local company. The interviewed product manager felt confident about this order because the original equipment was from them, and they had all the drawings already ready for it. The local competitor had to conduct reverse engineering and measure everything about the equipment, but it was not a problem for them. Another reason why the product manager felt confident about this was that they

had a good vendor in China, and price-wise, it is easier to compete with a Chinese producer than an Australian one.

Where the case company fell short in meeting requirements was in field service capabilities, as it lacked that experience. They offered to supervise it and hire another company for the hands-on work. The local competitor had all the labour in-house. The customer wanted one company working on the project, and with the case company, there would have been two. The deal was lost, but this experience stuck with the management of the case company because they ultimately continued to pursue ways to improve their sales of this equipment. In two years, they hired an entire team for this specific equipment, which put the case company in a much better position for future deals.

5.2 Thematic analysis of the interview answers

In this chapter, the interviews are analysed, and the findings are presented under five themes that emerged from the data.

The themes are:

1. Organizational experience
2. Customer relationship and trust
3. Communication
4. Understanding the Customer's Decision-Making Process
5. The role of risk management in large B2B project decisions

5.2.1 Organizational experience

There are 15 partnerships presented in this thesis. Therefore, in this study on organizational experience and its possible link to successful deals, the work experience, in the case company, is based on 17 interviewed individuals. Each person interviewed was asked how long they had worked in the case company.

Interestingly, a pattern emerged when comparing the work experience of interviewees in the company across the projects. In successful deals, the interviewee tended to have worked longer in the company than in lost deals. The data shows that in successful deals, interviewees had worked for the company for an average of 17 years (median: 14), whereas in lost deals the average was 8 years (median: 7). This means that the average work experience in the company was approximately 50% lower in lost deals than in successful deals. This is a relatively small dataset, but it suggests a potential connection that could be studied further in the future. Based on the interviews, longer experience in the company may help in building closer relationships with customers and suppliers. It may also improve confidence and deepen knowledge of the company's complex and technical products and services.

In many examples, the case company has been supplying and servicing equipment for decades. For example, in Partnership E, the organizational relationship goes back to 1965, which has been an important aspect of credibility and building a relationship between the organizations. The account manager has had a long-standing relationship with the customer since 1998, contributing significantly to trust and project success. Also, when the person responsible for Partnership G was interviewed, there had been a long history with the customer, and the previous good performance contributed to the customer's decision to proceed with the deal. And the key decision-maker was familiar with the case company's team, and this familiarity supported trust and cooperation. Trust and relationships can be built between people and organizations, and both are important. Long-term relationships between organizations foster trust, and the longer people have worked for the company, the more time they have to develop close relationships with customers.

5.2.2 Customer relationship and trust

Trust came up in every interview that was conducted. One interviewee put it well when they used a metaphor, saying that building trust is like growing a coconut tree; it takes

years to grow, and losing trust is like the coconut falling from the tree; it happens fast. The metaphor illustrates the amount of effort and time required to build trust and how quickly it can be lost.

Nevertheless, trust is not necessarily lost when things go wrong, because those situations were also opportunities to build trust. The outcome of the situation depends on how you handle and resolve it. When things go wrong, it is important to stand up and support the customer, be transparent about the issues, and clearly communicate the actions being taken to resolve the situation. If things go wrong, but they are fixed quickly, that can build the relationship even closer. This finding is also supported by research; many researchers argue that when conflict is managed efficiently, it can have a positive outcome on the relationship (Weitz & Bradford, 1999). The benefits of well-managed conflict can be 1. Interest in exploring new approaches, 2. To discuss issues directly and find solutions together 3. Better understanding of problems, 4. Aligning assumptions and perspectives, 5. Motivates to adapt and grow 6. Managing resources 7. Creating new norms in the relationship and lastly, 8. It can build both parties' commitment to the relationship (Weitz & Bradford, 1999; Amason, 1996; Brown, 1983; Deutsch, 1973; Pondy, 1967; Stern, El-Ansary, & Coughlan, 1996).

A key lesson learned is that when problems arise, openness and transparency with the customer are crucial. Attempting to hide issues risks damaging trust, and negative experiences can quickly spread to other customers, potentially leading to reputational harm. A good reputation is one of the key advantages of the case company, and it is often mentioned as one of the main reasons why they were chosen in successful deals. Therefore, it is essential to complete projects well to protect it. If problems arise, it is important to fix them promptly and communicate openly; never abandon the customer to deal with the problem alone. Always offer support even if a third party causes the issue, because these are perfect opportunities to build trust and a closer relationship. Even after negative experiences, it is important not to give up but to start proactively repairing the relationship and rebuilding trust.

When the person responsible for Partnership E was interviewed about the relationship, the customer was said to be brand loyal and that they did not explore other suppliers. Trust was high between the companies, and it was built over decades of collaboration and support. The example of Partnership H taught that providing support without immediate commercial benefit builds long-term trust and increases the likelihood of future deals. Completing a small project well can build the customer's trust in the company's capabilities; therefore, small projects should not be overlooked, as they can open doors to larger projects. The interview with the person responsible for Partnership B (South Africa, 10 million won) illustrated this and showed how past decisions can significantly influence trust. The case company's earlier withdrawal from South Africa had left a lasting negative impression. One key decision-maker was against the project because, years earlier, the case company had closed its operations in the region and, in his view, had not provided sufficient support at that time. Even though the company had re-established itself in the region already some years ago, rebuilding trust takes time. When deciding to shut down operations in a region, it is important to consider factors beyond just the numbers. People remember how they were treated, even years later.

With Partnership H, trust was built over time, especially through previous successful projects and consistent after-sales support. The company was trusted to provide reliable support in case of future issues. Although the equipment's original supplier was also competing for the same deal, the customer chose the case company due to the trust built through previous collaboration and support.

In the interviews with the persons responsible for Partnerships B and J, when a project is complex or requires high-level engineering skills, the customer turned to the case company. This is especially true when production must be stopped to install the equipment. In industries like mining or paper, production shutdowns mean lost profits, so customers want to avoid any delays in restarting operations and minimize downtime. In most situations, the customer trusts that the case company is reliable and professional

and will not cause delays. However, in the example of Partnership K, trust was lost. Since the project involved a shutdown, the customer did not believe they would receive the part on time and chose a competitor instead. This decision was influenced by a previous delay six months earlier, and management even instructed not to choose the case company. Once trust is lost due to a negative experience, it takes time and effort to rebuild, so it is crucial to protect it from the beginning. However, it is possible to regain customers' trust after losing it. This happened in Partnership N, where the customer had a negative experience with the case company five years earlier due to quality issues and missing materials. When the case company was awarded a new project five years later and executed it successfully, trust was rebuilt between the companies. This also led to new opportunities for future projects.

5.2.3 Communication

All interviewees agreed on the importance of face-to-face time and that more face-to-face time with the customer increases the chances of winning a deal. While emails, phone calls, and Teams calls are useful, face-to-face interaction was seen as the most valuable. For example, in Partnership E meetings, presentations, and reference visits in the U.S. helped build trust and inform the customer. In Partnership G, it was said that communication was one of the most important success factors. There were more than ten face-to-face meetings over two years, demonstrating strong engagement and relationship-building. In Partnership I, communication was multi-layered, involving top management, site-level involvement, and both formal (meetings) and informal (WhatsApp) channels. The long-standing relationship and communication across levels helped position the case company as a reliable partner. Site visits and proactive discussions were considered essential for understanding the customer's needs early on. In Partnership J (USD 14 million won), success came from direct contact with decision-makers, weekly Teams calls, and in-person meetings that ensured alignment and trust.

In face-to-face meetings, it is easier to sense how people really feel. Customers might say one thing but mean another, which is hard to detect in emails or calls. Another key

benefit is that during site visits, after a group meeting, one-on-one conversations during a site walk can reveal valuable insights, such as what decision criteria matter most. In some lost deals, communication was approximately 70 percent email, 30 percent phone, and there were no face-to-face meetings. Regular contact and on-site presence help uncover opportunities and strengthen the case company's position. In Partnership H (EUR 35 million won), ongoing communication, including regular site visits and inspections, helped identify a business opportunity early. The sales manager saw strong communication and collaborative problem-solving as major success factors.

It is essential to receive information about potential delays as early as possible so that the contact person can proactively inform the customer. According to the interviewee, internal communication does not always work as intended when delays in the supply chain slow down the process, and central logistics hubs sometimes fail to understand the urgency of certain orders, especially when a part is needed within 24 hours. A recurring issue is the lack of a clearly responsible person in logistics after a deal is made. Deliveries sometimes fall into a "black hole" where no one takes ownership. According to the interviewee in logistics, it would be better to have assigned responsible people than solely relying on systems. According to the interviewee, management tends to place too much faith in processes and digital tools, but these systems often fail to detect when something goes seriously wrong. Clearly defined supply scopes and handover meetings are crucial for ensuring on-time deliveries. While part tracking is generally well-managed, those who face challenges with delivery often recommend regular handover meetings to improve coordination. For example, Partnership J showed how well-structured kick-off meetings and weekly meetings brought internal alignment and teamwide contribution that were the keys to success in a complex project.

Delays in responding to customers can reduce competitiveness, as illustrated by Partnerships C and D. The experience in Partnership H highlighted the importance of proactivity and responsiveness in time-critical situations, particularly when competing with existing suppliers. In a globally operating company, time zone differences and slow

internal logistics responses slow down communication. When interviewing the customer, it was confirmed from the customer's perspective that delayed quotations without a reason decrease competitiveness. Also, according to the customer, a lacking offer that is not detailed enough decreases chances of getting the deal, but the case company was praised for sufficiently detailed offers.

In discussions with the customer, it is important to have good preparation and confirmed process data. Extensive effort needs to be put into presentations and technical reports to effectively communicate the company's abilities. A critical success factor is to have all the teams aligned and sending a clear message to the customer. To have a clear message to the customer, the internal communication must be working well. The key to a successful project is to have an internal kick-off meeting and weekly meetings with everyone involved in the project so that everyone is aligned.

5.2.4 Understanding the Customer's Decision-Making Process

The case company is perceived as a premium company in its market, and in quotations, they are usually the highest bidder, sometimes hundreds of thousands of euros more than the next competitor. The premium price needs to be justified by adding extra value; if there is no extra value, then the customer can not justify paying more for the equipment if the product is the same if bought cheaper from the competitor (see Partnership A). Communication is important in explaining the technical benefits and added value of upgrading equipment. Customers value the know-how of the case company and its technical capabilities to predict when parts are going to be worn out. Also, the case company's significant resources in engineering, calculations, and safety are appreciated.

The premium price must reflect premium quality on time. A strong brand, combined with technical expertise and relationship quality, can outweigh cost concerns. If the case company can consistently deliver on time and meet quality expectations, pricing can become a secondary concern for many customers. However, when deliveries are late or

quality is compromised, pricing becomes an issue. To ensure timely delivery, it is important to focus on improving the control of the supply process and making small yet significant enhancements where possible. Customers expect to receive high-quality products on time, consistently. Maintaining a premium brand requires continuously meeting high expectations.

This study found that decision-making processes can be slow and protocol-driven, but it is important to be patient. For example, in Partnership B, the customer was a large public–private company, the decision-making process was long and complex, with many protocols to follow. These processes require resources, patience, and long-term engagement from the case company. In many instances, although the decision-making process was very long, in the end, the case company was still awarded the deal. The example of Partnership E showed that patience is critical, as the decision-making process took over two years and discussions paused at times, but the sales team persisted, showing awareness of the customer's pace and needs. Partnership E taught that patience and persistence are key in long, complex sales processes. Bringing the right internal experts at the right time can support success.

In the example of Partnership D, the decision-making process was lengthy (3 years), complex, and involved multiple levels, including senior management, but in the end, the case company was not awarded the deal. Although there are many successful stories with long decision-making times, it is still disappointing, and it can feel like a waste of resources when, after years of negotiations, the deal does not happen. Still, a well-done attempt at selling a project, even when it does not lead to a deal, can be important in building the relationship long-term. These interviews have taught that it is in the case company's strategic interest to build long-term relationships with customers. Most successful stories presented in this thesis have had a close relationship with the customer for years, even decades.

As a customer, the pulp and paper industry differs from the mining sector: the budgets are fixed annually, and there is more price sensitivity, because the price of paper does not fluctuate as much as minerals. Investments are often made in smaller packages due to financial constraints. According to the interview with the person responsible for Partnership C (lost pulp and paper deal), pulp and paper industry customers are price-sensitive. Interview with the person responsible for Partnership G (won pulp and paper deal) taught that maintaining regular contact and long-term relationships pays off in trust-based industries like pulp and paper. In highly price-sensitive industries, the pricing strategy must match customer expectations. Leaving room for negotiation can backfire if no negotiation takes place. For instance, in Partnership C, the quotation offered to a pulp and paper customer included flexibility for price negotiations, but discussions never began because the initial price was considered too high. Faster response times and competitive pricing are essential when the customer is likely to split orders. Understanding sector-specific budget cycles is critical to aligning offers.

In the example of Partnership A, the case company had good relationships with people at the plant, but they did not have close relationships or face-to-face meetings with the key decision-makers. The account manager's opinion on what could have been improved the answer was "building and developing the relationship with the decision-makers, if there was more time to sell to them, we would have been better positioned". The case company has better chances of getting a deal when they have a chance to influence the decision-making early. Early influence on the project gives the best chance of also getting the deal. One of the key learnings is the importance of having a good relationship with the decision-makers. In many instances, there were good relationships with people working at the customer's site, but not with the decision-makers. An interesting but simple tool came up in the interviews, which was a picture of the customer's organization chart and color codes on whether there is a relationship between that person and not. These kinds of tools used in large corporations highlight the importance of personal relationships in B2B project deals.

5.2.5 The role of risk management in large B2B project decisions

To understand the customer's decision-making, it is important to understand the customer's focus on risk management in large projects. There are different kinds of aspects of risk management, for example, health and safety, operational, legal and compliance, reputational, and financial risk management. In the mining industry, the financial risk is carefully calculated, because it is not only about finding the minerals and getting them from the ground, but it must also be profitable for any private company to do it. It is important to remember that the human aspect is that the decision-makers are sometimes willing to pay more for a project if it minimizes the risk of the project failing, because if the project fails, the decision-makers might lose their jobs, and it is only human to want to protect it.

Warranty terms and risk mitigation can play a significant role in the final decision, not just price or product features. In the example of Partnership J, the customer's risk management practices, particularly the use of contract clauses and close engineering collaboration, played a key role in how the deal developed. Also, offering a turn-key solution and providing guarantee documents increased perceived reliability. In the example of Partnership G, the established relationship and proven track record lowered the customer's perceived level of risk. In the example of Partnership N, the contract included a clause requiring compensation for delays, creating a strong incentive for the company to avoid schedule overruns.

In Partnership H, the decision-making process was relatively fast (approx. one month), which was due to the urgency created by the production risk. There were three key decision-makers identified, suggesting a small and efficient decision group. The offer's inclusion of installation support and continuing inspections as a lifetime support service in the future aligned with the customer's priorities. Including long-term support services in the offer can be in the interest of the customers, especially for those who are more risk-averse.

With Partnership I, there was classic risk-averse behaviour, where the customer took six months to decide, and the customer did not want the production interrupted, which meant that the customer valued reliability and low risk over cost. The previous negative experience with cheaper suppliers shaped their decision to choose a higher-priced, trusted option. The customer chose the case company despite an almost 50% higher price, indicating high trust and low risk tolerance.

One of the most important aspects in the mining industry is the customer's interest in minimizing the risk of longer downtime. Often, when equipment is updated, the production needs to be stopped for the time of the installation, and the customer is losing profits while the production is down. In most examples, the customers perceive the case company as a reliable partner to handle the shutdown without delays, but in Partnership K, the customer's previous negative experience created distrust, especially regarding delivery reliability during the shutdown. The parts in the deal were critical, and any delay would be costly, which means risk avoidance was the key in this example. The competitor was chosen as the preferred partner despite similar offerings due to better perceived risk management. The customer rejected financial penalties as insufficient risk coverage.

Another example of a risk-based decision came up in the interview about Partnership G, where the customer was willing to pay a higher price because they felt more secure working with a large, established supplier. The customer believed that it is safer to work with a big and stable company that can offer support and take responsibility if problems occur. In several interviews, it was mentioned that a clear advantage of the case company is that it is "big enough to be sued." This gave the customer confidence that if something went wrong, they could get support or even take legal action and receive compensation. Smaller local companies, even if sometimes preferred, could go bankrupt if sued, which makes them a riskier choice.

According to the interview of Partnership D, trust and relationship quality remained strong, even though the deal was lost. The customer showed brand loyalty by not exploring other suppliers and choosing to insource instead. The case company had previously built trust by promptly resolving issues with, for example, products from India that had quality issues. Even strong relationships do not guarantee future business if the customer finds a more cost-effective or independent solution. It was more expensive to make the first one than to buy from the case company, but from now on, when they need the equipment replaced, they can do it cheaper. After the customer has developed their own models, it can make future sales in that product category unfeasible.

6 Conclusion

The continuously growing demand for critical minerals places the mining industry at the center of the transition to a more sustainable future. However, even as demand rises, large investment decisions in this sector often take years to materialize due to their complexity, financial scale, and exposure to global market fluctuations. This thesis studied how investment decisions are made for large B2B projects in the mining industry, focusing on how economic factors, project management practices, and relationship quality influence these decisions. The study consisted of a literature review, quantitative analysis, and qualitative analysis, and by combining data analysis with interviews, this thesis aimed to provide a broader understanding of how external and internal factors jointly shape investment behaviour. The combination of quantitative and qualitative methods allowed for a richer, triangulated understanding of investment decision-making in large B2B projects. To the author's knowledge, this integrated approach has not previously been applied to this specific topic. Therefore, the study provides valuable insights to the wider B2B sales industry within the mining sector.

The literature review showed that project management, trust, communication, and risk management are closely linked and play a key role in both project success and relationship quality. Long-term relationships are most valuable when they are profitable and strategically aligned (Anderson, 2006). In large international projects, effective risk management is critical, as poor planning or coordination can lead to significant financial, reputational, and environmental consequences.

The quantitative study examined how macroeconomic indicators, commodity prices, and exchange rates correlate with the case company’s monthly sales orders between 2020 and 2024. The results showed that both business lines were influenced by different external factors, reflecting their different customer groups and characteristics. In the first business line, which focuses on complex, engineering-driven projects, the findings suggest that changes in commodity prices and exchange rates may influence sales with short time lags. This indicates that market fluctuations can have both immediate and

slightly delayed effects on customers' investment decisions. In contrast, the second business line, which focuses on more standardized products, seemed to be more affected by changes in global demand and interest rates, showing a stronger sensitivity to overall market conditions. Regression analyses confirmed that combinations of macroeconomic indicators jointly explained part of the variation in monthly sales orders, which suggests that sales performance can be shaped by the interaction of several economic variables rather than any single dominant factor.

Overall, the results indicate that macroeconomic conditions can slightly influence large B2B project sales, but their impact differs between business lines depending on the type of offering and customer decision-making behavior. These findings provide valuable insights into how external economic factors may affect sales performance in industrial project environments. The observed relationships likely reflect the overall economic situation rather than the impact of one specific variable. As the analysis is based on one company and a relatively short time series, the results should be interpreted as indicative rather than generalizable.

A qualitative analysis was conducted through interviews to complement the quantitative findings. While the results showed that macroeconomic variables influence sales, the study found that trust, relationships, and communication with customers have an even greater impact on project sales success. In the qualitative study, the case company's representatives who were responsible for the cases were interviewed, including a customer perspective. The interview findings were analysed and five themes emerged from the interviews: Organizational experience, Customer relationship and trust, Communication, and Understanding the Customer's Decision-Making Process and the role of risk management in large B2B project decisions.

The main takeaway from the interviews was the importance of building long, close, and personal relationships with customers. Helping customers in need and demonstrating reliability and trustworthiness as a partner. Customers are often willing to accept a

premium price if the value, service, and support provided are at the same high level. Therefore, the case company should focus on investing in value creation rather than competing on prices. On the other hand, being a premium company and priced higher than competitors brings a certain responsibility to deliver the highest quality on time consistently. It is also important to handle every project with care, as successful project delivery, regardless of size, can strengthen the customer's perception of the company as a trustworthy partner.

6.1 Theoretical Implications

This study contributes to the academic discussion on international project management, B2B relationships, and decision-making in large industrial projects. The findings support earlier research showing that successful projects depend not only on planning and technical performance but also on communication, collaboration, and trust between stakeholders (Munns & Bjeirmi, 1996; Joslin & Müller, 2016). In complex industrial settings, these relational aspects are essential for managing risks. The results also strengthen the understanding of relationship quality in B2B environments. In line with previous studies (Morgan & Hunt, 1994; Arli et al., 2018), this thesis highlights that trust, commitment, and personal interaction remain essential even in today's digital business environment. In the studied cases, face-to-face contact was often a key factor in successful negotiations and long-term collaboration. Finally, the findings suggest that investment decisions in large projects are influenced not only by economic factors but also by relationships, communication, and human judgment. This supports the idea that decision-making in global complex projects, like in the mining industry, is both analytical and relational, rather than purely rational or data-driven.

6.2 Managerial Implications

There should be incentives to retain employees who are well-connected with stakeholders, particularly with customers, as they are valuable to the company. Changing these employees would take years for a new person to establish relationships

with the customers. Relationships need to be built more strategically with the key decision-makers. In many of the interviewed cases, there was a close relationship with the people working at the plant, but not with the people who made the investment decisions. A tool for this is a picture of the customer's organization chart, and from there, color coding the level of relationship with the relevant parties.

Often, the interviewees claim that a deal was lost because the price offered was too high. This study shows that, in many cases, being the highest bidder is not the issue as long as the added value aligns with the pricing. This is consistent with Gordon (2000), who argues that business relationships are sustained when both parties perceive mutual value creation. If the product is simple and there is no significant difference between the products from different producers, then pricing is very important. However, in complex solutions, the extra services and support can make a significant difference, even if the price is the highest among bidders, as long as the customer feels that they are getting the most out of it. It is important to have the skills to demonstrate to the customers the impact the new solution would bring to them. Effective communication plays a key part in convincing the client. A supplier-centric mindset that assumes customers should recognize superior value is outdated. It is important to build a close relationship with the customer to understand what's truly important to them and communicate the added value clearly. For example, a customer may value a complete turn-key solution, even if they did not specifically request it in the quotation. Innovations are valuable to differentiate from competitors. Strategic partnerships should be built in collaboration with customers, as done in partnership M.

In partnership D, the deal was lost due to the price being too high, but more importantly, because the customer's strategic intent was to produce the equipment themselves. Once the customer has invested in the expensive process of engineering and modeling, and can replicate the equipment fully on their own at a lower price, it becomes almost impossible to regain them as customers for that specific equipment. Therefore, close relationships with customers are essential to know if they plan to produce equipment

independently. If a customer is interested in local production, the equipment should be sold to them at a lower price. Otherwise, if they start producing it themselves, they may lose interest in the equipment, as they can now do it themselves.

According to one anonymous interviewee, the current logistics KPIs drive behaviour toward minimizing cost rather than reducing lead time. Key performance indicators (KPIs) should be unified across functions, with customer satisfaction as the primary metric. Everyone should work toward a common goal of maximum customer satisfaction.

Closing down operations in South Africa negatively affected customers' trust, as they felt the company's support was insufficient. Years later, when operations resumed, it took time to rebuild trust. Therefore, when deciding to close down operations in certain regions, it is essential to consider the negative impact on customer trust in the area, as this can have long-term consequences. Additionally, the interviews revealed that site coverage in key markets, such as Wisconsin, USA, should be increased.

6.3 Limitations of the study

This study was a case study that focused on a single company in the mining industry; therefore, the findings may not apply to all large B2B project contexts or to companies operating in different sectors. Mineral price cycles are specific to the industry, which limits the broader applicability of the results. Additionally, the combination of mining, large-scale B2B projects, and an international context may not be suitable for generalization. In the theory section, not all potentially relevant perspectives are covered. Given scope constraints and the need to maintain a focused analytical lens, frameworks such as institutional theory and behavioural economics are not discussed in depth. The literature review prioritizes theories that are most directly applicable to the research questions and the empirical context of the case.

The study also acknowledges the limitations of a single-case design, particularly regarding generalizability. Data availability and the specificity of the case context may

limit the extent to which findings can be applied across different industries or geographic regions.

For the data analysis, the study used the case company's historical sales order data, which is confidential and inaccessible outside of the company. This limits the possibility for others to replicate the analysis exactly. Since the data relate to the years 2020–2024, some of the results may partly reflect COVID-19–related disruptions in the economy and in the case company's operations, rather than only normal market conditions.

While these limitations narrow the generalizability of the findings, they also allowed for an in-depth and focused analysis of the specific context. The results still provide valuable insights into decision-making in large B2B projects in the mining industry and may inspire future studies in other contexts.

6.4 Possibilities for future research

A recommendation for future research is to conduct geographical sales studies, such as through sensitivity analysis, and employ various research methods to gain more detailed and context-specific insights. Since this case focused on one company in the mining industry, future research could examine other mining companies as well as other sectors in large-scale B2B projects. Given its timeliness, this topic could also be re-examined through alternative theoretical lenses. There are almost endless possibilities for perspectives, theories, and frameworks that could be applied. This study relied on confidential sales order data; however, future studies could utilize publicly available industry data. In addition, interviews could be conducted across multiple firms to provide broader insights.

References

Abuhantash, A., Johnston, W., & Lewin, J. (2018). Organizational buying behavior: Toward an integrative framework. *Journal of Business Research, 35*(1), 1–15. https://doi.org/10.1016/0148-2963(94)00077-8

Amason, A. C. (1996). Distinguishing the effects of functional and dysfunctional conflict on strategic decision making: Resolving a paradox for top management teams. Academy of Management Journal, 39(1), 123–148. https://doi.org/10.2307/256633

Anderson, C. (2006). The long tail: Why the future of business is selling less of more. Hyperion. https://doi.org/10.22230/cjc.2008v33n1a1946

Anglani Francesco, Pennetta Selene, Reiache Carmen, Boylee Stephen. (2023). Crossing digital frontiers with cultural intelligence - a new paradigm for project managers, International Journal of Project Management, Volume 41, Issue 8, 2023, 102543, ISSN 0263-7863, https://doi.org/10.1016/j.ijproman.2023.102543

Ansari, R., Shakeri, E., & Raddadi, A. (2015). A framework for aligning project management with organizational strategies. International Journal of Project Management, 33(1), 202–213. https://doi.org/10.1016/j.ijproman.2014.06.003

Arli, D., Bauer, C., & Palmatier, R. W. (2018). Relational selling: Past, present, and future. Industrial Marketing Management, 69, 169–184. https://doi.org/10.1016/j.indmarman.2017.07.018

Avots, I. (1969). Why Does Project Management Fail? California Management Review, 12(1), 77-82. https://doi.org/10.2307/41164208

Baccarini, D. (1996). The concept of project complexity a review. In International Journal of Project Management (Vol. 14, Issue 4). https://doi.org/10.1016/0263-7863(95)00093-3

Batt, P. J. (2008). Building social capital in networks. *Industrial Marketing Management, 37*(5), 487–491. https://doi.org/10.1016/j.indmarman.2008.04.002

Benítez-Ávila Camilo, Hartmann Andreas, Dewulf Geert, Henseler Jörg. (2018). Interplay of relational and contractual governance in public-private partnerships: The mediating role of relational norms, trust and partners' contribution, International

Journal of Project Management, Volume 36, Issue 3, 2018, Pages 429-443, ISSN 0263-7863, https://doi.org/10.1016/j.ijproman.2017.12.005

Bharadwaj, N., & Shipley, G. M. (2020). Salesperson communication effectiveness in a digital sales interaction. Industrial Marketing Management, 90, 106–112. https://doi.org/10.1016/j.indmarman.2020.07.002

Björkman, I., & Kock, S. (1995). Social relationships and business networks: The case of Western companies in China. *International Business Review, 4*(4), 519–535. https://doi.org/10.1016/0969-5931(95)00023-2

Blau, P. (1986). Exchange and Power in Social Life (2nd ed.). Routledge. https://doi.org/10.4324/9780203792643

Bolton, R. N., Smith, A. K., & Wagner, J. (2003). Striking the Right Balance: Designing Service to Enhance Business-to-Business Relationships. Journal of Service Research, 5(4), 271–291. https://doi.org/10.1177/1094670503005004001

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Brown, D. (1983). Managing conflict at organizational interfaces. Addison-Wesley. https://archive.org/details/managingconflict00brow/page/n11/mode/2up

Brown, J. R., Crosno, J. L., & Tong, P. Y. (2019). Is the theory of trust and commitment in marketing relationships incomplete? *Industrial Marketing Management, 77*, 155–169. https://doi.org/10.1016/j.indmarman.2018.10.005

Carvalho, M. M., Patah, L. A., & de Souza Bido, D. (2015). Project management and its effects on project success: Cross-country and cross-industry comparisons. *International Journal of Project Management, 33*(7), 1509–1522. https://doi.org/10.1016/j.ijproman.2015.04.004

Cavusgil, S. T., Deligonul, S., Ghauri, P. N., Bamiatzi, V., Park, B. I., & Mellahi, K. (2020). Risk in international business and its mitigation. *Journal of World Business, 55*(2), 101078. https://doi.org/10.1016/j.jwb.2020.101078

Cerić Anita, Vukomanović Mladen, Ivić Ivona, Kolarić Sonja. (2021). Trust in mega

projects: A comprehensive literature review of research trends, International Journal of Project Management, Volume 39, Issue 4, 2021, Pages 325-338, ISSN 0263-7863. https://doi.org/10.1016/j.ijproman.2020.10.007

Certo, S. T., Connelly, B. L., & Tihanyi, L. (2008). Managers and their not-so-rational deci sions. *Business Horizons, 51*(2), 113–119. https://doi.org/10.1016/j.bushor.2007.11.002

Chugh, D. (2004). Societal and managerial implications of implicit social cognition: Why milliseconds matter. *Social Justice Research, 17*(2), 203–222. https://doi.org/10.1023/B:SORE.0000027410.26010.40

Clark, T. and Rajaratnam, D. (1999), "International services: perspectives at century's end", Journal of Services Marketing, Vol. 13 No. 4/5, pp. 298-310. https://doi.org/10.1108/08876049910282556

Cohen, J. (1988). Statistical Power Analysis for the Behavioral Sciences (2nd ed.). Routledge. https://doi.org/10.4324/9780203771587

Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods re search* (3rd ed.). SAGE. Retrieved from https://books.google.com/books/about/Designing_and_Conducting_Mixed_Methods_R.html?id=eTwmDwAAQBAJ

Cyert, R. M., & March, J. G. (1963). A behavioral theory of the firm. Englewood Cliffs, NJ: Prentice Hall.

Day, M., Fawcett, S.E., Fawcett, A.M. and Magnan, G.M. (2013), "Trust and relational embeddedness: exploring a paradox of trust pattern development in key supplier relationships", Industrial Marketing Management, Vol. 42 No.2,pp.152-165

Delios, A., Perchthold, G., & Capri, A. (2021). Cohesion, COVID-19 and contemporary challenges to globalization. *Journal of World Business, 56*(3), 101197. https://doi.org/10.1016/j.jwb.2021.101197

Deutsch, M. (1973). The resolution of conflict: Constructive and destructive processes. Yale University Press. https://www.scribd.com/document/787493793/DEUTSCH-1973-the-resolution-of-conflict-constructive-and-destructive-processes

De Wit, A. (1988). Measurement of project success. International Journal of Project

Management, 6(3), 164–170. https://doi.org/10.1016/0263-7863(88)90043-9

Duncan, G. L., & Gorsha, R. A. (1983). Project management: A major factor in project success. IEEE Transactions on Power Apparatus and Systems, PAS-102(11), 3701–3705. https://doi.org/10.1109/TPAS.1983.317755

European Central Bank. (2024, July). *Economic Bulletin, Issue 4/2024*. https://www.ecb.europa.eu/pub/pdf/ecbu/eb202407.en.pdf

The European Commission. (2020). *Critical Raw Materials for Strategic Technologies and Sectors in the EU.* Retrieved 4th of April 2024 from https://doi.org/10.2873/865242

Evans, J. S. (2003). In two minds: Dual-process accounts of reasoning. *Trends in Cognitive Sciences, 7*(10), 454–459. https://doi.org/10.1016/j.tics.2003.08.012

Falcão, H., & Wiegelmann, T. (2025). The Secret to Cross-Cultural Negotiations. *Harvard Business Review*, *103*(2), 82–91. Retrieved 24.3.2025 from https://research-ebsco-com.proxy.uwasa.fi/linkprocessor/plink?id=443f8bf1-b2c3-3df8-aac3-ded8ac095787

Floyd, M. K., Barker, K., Rocco, C. M., & Whitman, M. G. (2017). A multi-criteria decision analysis technique for stochastic task criticality in project management. Engineering Management Journal, 29(3), 165–178. https://doi.org/10.1080/10429247.2017.1340038

Genewein, T., Leibfried, F., Grau-Moya, J., & Braun, D. (2015). Bounded rationality, abstraction and hierarchical decision-making: an information-theoretic optimality principle. *Frontiers in Robotics and AI, 2*: 27, pp. 1-24. https://doi.org/10.3389/frobt.2015.00027.

Gordon, I. (2000), “Organizing for relationship marketing”, in Sheth, J.N. and Parvatiyar, A. (Eds), Handbook of Relationship Marketing, Sage, London, pp. 482-502.

Gray, D. M., Hicks, N., & Rundels, J. J. (2020). Getting in the game: Putting golf at the forefront of your networking toolbox. *Business Horizons, 63*(5), 627–636. https://doi.org/10.1016/j.bushor.2020.05.005

Griffiths, T. L., Lieder, F., & Goodman, N. D. (2015). Rational use of cognitive resources:

Levels of analysis between the computational and the algorithmic. *Topics in Cognitive Science, 7*(2), 217–229. https://doi.org/10.1111/tops.12142

Grozdić, V. (2023). Economic evaluation of investment projects: Determining the key fac tors for final investment decision. *Lex Localis – Journal of Local Self-Government, 21*(1), 45–70. https://doi.org/10.4335/21.1.45-70(2023)

Grönroos, C. (1990). *Service management and marketing: Managing the moments of truth in service competition*. Lexington Books.

Hakanen, M., Kossou, L., & Takala, T. (2016). Building interpersonal trust in business net works: Enablers and roadblocks. Journal of Business Models, 4(1), 45-62. https://doi.org/10.5278/ojs.jbm.v4i1.1198

Haniff, A. P., & Galloway, L. (2022). Modeling strategic alignment in project networks. International Journal of Project Management, 40(5), 517–530. https://doi.org/10.1016/j.ijproman.2022.05.001

Hanna, P., & Vanclay, F. (2013). Human rights, Indigenous peoples and the concept of Free, Prior and Informed Consent. *Impact Assessment and Project Appraisal*, *31*(2), 146–157. https://doi.org/10.1080/14615517.2013.780373

Hanna, P., Vanclay, F., Langdon, E. J., & Arts, J. (2016). Conceptualizing social protest and the significance of protest actions to large projects. *The Extractive Industries and Society, 3*(1), 217-239. https://doi.org/10.1016/j.exis.2015.10.006

Hastie, R. (2001). Problems for judgment and decision making. *Annual Review of Psy chology, 52*, 653–683. https://doi.org/10.1146/annurev.psych.52.1.653

Haytko, D. L. (2004). Firm-to-firm and interpersonal relationships: Perspectives from advertising agency account managers. Journal of the Academy of Marketing Science, 32(3), 312–328. https://doi.org/10.1177/0092070304263432

Hochman, G. (2024). Beyond the surface: A new perspective on dual-system theories in decision-making. Behavioral Sciences, 14(11), 1028. https://doi.org/10.3390/bs14111028

Horvitz, E., & Zilberstein, S. (2001). Computational tradeoffs under bounded resources. *Artificial Intelligence, 126*(1–2), 1–4. https://doi.org/10.1016/S0004-3702(01)00051-0

The International Energy Agency. (2022). The Role of Critical Special Report Minerals in Clean Energy Transitions. World Energy Outlook. https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions#overview

Inoni, O. R., Gabriel, C. G. E., Salami, E., & Olannye, A. P. (2019). *Effects of internal and external factors on organizational buying behaviour: A review of extant literature.* Izvestiya Journal of Varna University of Economics, 63(3), 216–237. https://journal.ue-varna.bg/uploads/20191113121651_14628366615dcbf433886c3.pdf

Jégourel, Y. (2020). The global iron ore market: From cyclical developments to potential structural changes. The Extractive Industries and Society, 7(3), 1128–1134. https://doi.org/10.1016/j.exis.2020.05.015

Jiang, Z., Henneberg, S. C., & Naudé, P. (2011). The importance of trust vis-à-vis reliance in business relationships: Some international findings. *International Marketing Review*, *28*(4), 318–339. https://doi.org/10.1108/02651331111149921

Jordão, A. R., Costa, R., Dias, Álvaro L., Pereira, L., & Santos, J. P. (2020). Bounded rationality in decision making: an analysis of the decision-making biases. *Business: Theory and Practice*, *21*(2), 654-665. https://doi.org/10.3846/btp.2020.11154

Joslin, R., & Müller, R. (2016). The relationship between project governance and project success. *International Journal of Project Management, 34*(4), 613–626. https://doi.org/10.1016/j.ijproman.2016.01.008

Kahneman, D. (2003). Maps of bounded rationality: Psychology for behavioral economics. *American Economic Review, 93*(5), 1449–1475. https://doi.org/10.1257/000282803322655392

Kang, J.-K., & Kim, J.-M. (2008). The geography of block acquisitions. *Journal of Finance, 63*(6), 2817–2858. https://doi.org/10.2139/ssrn.891110

Klein, N. (2000). *No logo: No space, no choice, no jobs*. Picador. Retrieved February 28, 2025 from https://owd.tcnj.edu/~allyn/No%20Logo%20-%20Naomi%20Klein.pdf

Koponen, J. P., & Julkunen, S. M. (2022). Development of long-term B2B customer

relationships: The role of self-disclosure and relational cost/benefit evaluation. European Journal of Marketing, 56(13), 194–235. https://doi.org/10.1108/EJM-07-2020-0492

Lewicki, R. J., McAllister, D. J., & Bies, R. J. (1998). Trust and Distrust: New Relation ships and Realities. *The Academy of Management Review*, *23*(3), 438. https://doi.org/10.2307/259288

Lieder, F., Griffiths, T. L., & Hsu, M. (2018). Overrepresentation of extreme events in de cision making reflects rational use of cognitive resources. *Psychological Review, 125*(1), 1–32. https://doi.org/10.1037/rev0000074

Lyon, F. (2000). Trust, networks and norms: The creation of social capital in agricultural economies in Ghana. *Journal of Agricultural Economics, 51*(3), 271–282. https://doi.org/10.1111/j.1477-9552.2000.tb01077.x

Marañon, M., & Kumral, M. (2019). Kondratiev long cycles in metal commodity prices. Resources Policy, 61, 21–28. https://doi.org/10.1016/j.resourpol.2019.01.008

Matinheikki, J., Artto, K., Peltokorpi, A., & Rajala, R. (2016). Managing inter-organizational networks for value creation in the front-end of projects. International Journal of Project Management, 34(7), 1226–1241. https://doi.org/10.1016/j.ijproman.2016.06.003

McDonald, M., Millman, T., & Rogers, B. (1997). Key account management: Theory, prac tice, and challenges. *Journal of Marketing Management, 13*(8), 737–757. https://doi.org/10.1080/0267257X.1997.9964509

Meyer, K., van Witteloostuijn, A., & Beugelsdijk, S. (2017). What's in a p? Reassessing best practices for conducting and reporting hypothesis-testing research. *Journal of International Business Studies, 48*, 1–17. https://doi.org/10.1057/s41267-017-0078-8

Missonier, S., & Loufrani-Fedida, S. (2014). Stakeholder analysis and engagement in projects: From stakeholder relational perspective to stakeholder relational ontology. *International Journal of Project Management, 32*(7), 1108–1122. https://doi.org/10.1016/j.ijproman.2014.02.010

Moisoiu Cristian Marius. (2022). Springer Proceedings in Business and Economics. Springer, Cham. https://doi.org/10.1007/978-3-031-47925-0_25

Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. *Journal of Marketing, 58*(3), 20–38. https://doi.org/10.1177/002224299405800302

Morris, P. W. G., & Hugh, G. H. (1986). Preconditions of success and failure in major projects (2nd ed., Technical Paper No. 3). Templeton College, The Oxford Centre for Management Studies.

Mouzas, S., Henneberg, S., & Naudé, P. (2007). Trust and reliance in business relation ships. *European Journal of Marketing*, *41*(9–10), 1016–1032. https://doi.org/10.1108/03090560710773327

Mukherjee, D., Makarius, E. E., & Stevens, C. E. (2018). Business group reputation and affiliates' internationalization strategies. *Journal of World Business, 53*(2), 93–103. https://doi.org/10.1016/j.jwb.2017.12.003

Munns, A. K., & Bjeirmi, B. F. (1996). The role of project management in achieving the project success. International Journal of Project Management, 14(2), 81–87. https://doi.org/10.1016/0263-7863(95)00057-7

Musawir, A., Abd-Karim, S. B., & Mohd-Danuri, M. S. (2020). Project governance and its role in enabling organizational strategy implementation: A systematic literature review. *International Journal of Project Management*, 38(1), 1-16. https://doi.org/10.1016/j.ijproman.2019.09.007.

Nate, S., Bilan, Y., Kurylo, M., Lyashenko, O., Napieralski, P., & Kharlamova, G. (2021). Mineral policy within the framework of limited critical resources and a green energy transition. Energies, 14(9). https://doi.org/10.3390/en14092688

Nayyar, G., & Davies, E. (2023). *Services-led growth: Better prospects after the pandemic?* (Policy Research Working Paper No. 10382). World Bank. Retrieved 24.3.2025 from World Bank Document.

Nieć, M., Galos, K., & Szamałek, K. (2014). Main challenges of mineral resources policy of Poland. Resources Policy, 42, 93–103. https://doi.org/10.1016/j.resourpol.2014.10.010

Norrie, J., & Walker, D. H. T. (2004). A balanced scorecard approach to project manage ment leadership. Project Management Journal, 35(4), 47–56. https://doi.org/10.1177/875697280403500406

Obadia, C. (2010), "Benefits-based drivers of exporters' attitudinal commitment toward their foreign distributors: a longitudinal study", International Marketing Review, Vol. 27 No. 6, pp. 606-629. https://doi.org/10.1108/02651331011088254

Ojasalo, J. (2001). Key account management at company and individual levels in busi ness-to-business relationships. *Journal of Business & Industrial Marketing, 16*(3), 199–220. https://doi.org/10.1108/08858620110389803

Ojasalo, J. (2002). Key account management in information-intensive services. *Journal of Retailing and Consumer Services, 9*(5), 269–276. https://doi.org/10.1016/S0969-6989(01)00036-4

Petavratzi, E., & Gunn, G. (2023). Decarbonising the automotive sector: a primary raw material perspective on targets and timescales. Mineral Economics, 36(4), 545–561. https://doi.org/10.1007/s13563-022-00334-2

Pitron Guillaume, Delpeuch Samuel et Salin Mathilde. (2019). La Guerre des métaux rares The rare metals war. https://doi.org/10.3917/rce.025.0212

PMI Project Management Institute. (2013). A Guide to the Project Management Body of Knowledge ,5th ed., Newton Square, PA: Project Management Institute, Inc. https://doi.org/10.1002/pmj.21345

Pondy, L. R. (1967). Organizational conflict: Concepts and models. Administrative Science Quarterly, 12(3), 296–320. https://doi.org/10.2307/2391553

Renaud, M., & Kumral, M. (2020). Planning a Complex Mine Construction Project under Price Cyclicality. *Engineering Management Journal*, *32*(2), 120–129. https://doi.org/10.1080/10429247.2020.1718461

Ring, P. S., & van de Ven, A. H. (1992). Structuring cooperative relationships between organizations. *Strategic Management Journal*, *13*(7), 483–498. https://doi.org/10.1002/smj.4250130702

Shao, S., & Sorourkhah, A. (2024). A novel perspective on prioritizing investment projects

under future uncertainty: Integrating robustness analysis with the net present value model. *Economics, 18*(1), 20220111. https://doi.org/10.1515/econ-2022-0111

Simon, H. A. (1955). A behavioral model of rational choice. *The Quarterly Journal of Economics, 69*(1), 99–118. https://doi.org/10.2307/1884852

Simon, H. A. (1956). Rational choice and the structure of the environment. *Psychological Review, 63*(2), 129–138. https://doi.org/10.1037/h0042769

Singh, D., & Gaur, A. S. (2021). Risk mitigation strategies in international B2B relationships: Role of institutions and governance. *Journal of Business Research, 136*, 1–9. https://doi.org/10.1016/j.jbusres.2021.07.026

S&P Global. (2025). *Purchasing Managers' Index™ (PMI®)*. S&P Global Market Intelligence. Retrieved May 19, 2025, from https://www.spglobal.com/market-intelligence/en/solutions/products/pmi

Staw, B. M., & Ross, J. (1989). Understanding behavior in escalation situations. *Science, 246*(4927), 216–220. https://doi.org/10.1126/science.246.4927.216

Stern, L. W., El-Ansary, A. I., & Coughlan, A. T. (1996). Marketing channels (5th ed.). Prentice Hall.

Turner, J. R., & Müller, R. (2003). On the nature of the project as a temporary organization. International Journal of Project Management, 21(1), 1–8. https://doi.org/10.1016/S0263-7863(02)00020-0

Tversky, A., & Kahneman, D. (1973). Availability: A heuristic for judging frequency and probability. *Cognitive Psychology, 5*(2), 207–232. https://doi.org/10.1016/0010-0285(73)90033-9

Umbach, F. (2018). Energy Security in a Digitalised World and its Geostrategic Implications. https://www.researchgate.net/publication/334131738

Vanacker, T., Zahra, S. A., & Holmes, R. M. (2021). Corporate entrepreneurship, country institutions and firm financial performance. *Journal of World Business, 56*(3), 101162. https://doi.org/10.1016/j.jwb.2020.101162

Viio, P., & Grönroos, C. (2014). Value-based sales process adaptation in business

relationships. Industrial Marketing Management, 43(7), 1085–1095. https://doi.org/10.1016/j.indmarman.2014.05.022

Weitz, B. A., & Bradford, K. D. (1999). Personal selling and sales management: A relationship marketing perspective. Journal of the Academy of Marketing Science, 27(2), 241–254. https://doi.org/10.1177/0092070399272008

Williamson, O. E. (2023). The mechanisms of governance. Oxford University Press. https://doi.org/10.1093/oso/9780195078244.001.0001

Yi-Hsin Lin, Ting Zhu, Chan Joong Kim, S. Ping Ho. (2021). How do institutional pressures moderate the impacts of relational governance on the performance of international projects? An empirical assessment, International Journal of Project Management. Volume 39, Issue 7, 2021, Pages 726-737, ISSN 0263-7863. https://doi.org/10.1016/j.ijproman.2021.06.006.

Young, L. and Denize, S. (1995), "A concept of commitment: alternative views of relational continuity in business service relationships", Journal of Business & Industrial Marketing, Vol. 10 Nos 5/6, pp. 22-37. https://doi.org/10.1108/08858629510103879

Zeng, Y., & Xu, D. (2020). Liability of foreignness and the constitutive legitimation of for eign firms in a host country. *Journal of World Business, 55*(5), 101111. https://doi.org/10.1016/j.jwb.2020.101111

Zhang, J., Watson, G., IV, Palmatier, R. W., & Dant, R. P. (2016). Dynamic relationship marketing. Journal of Marketing, 80(5), 53–75. https://doi.org/10.1509/jm.15.0066

Appendices

Appendix 1. Interview Questions, case company representatives

Background Information:

• Name

• Current role at the case company

• How long have you worked at the case company?

• What was your role in this specific customer case?

Understanding the Customer's Decision-Making Process:

• Could you walk me through how the customer's decision-making process worked in this large investment case?

• Who were the key decision-makers on the customer's side?

• What roles did different departments (e.g., operations, procurement, top management) play within the customer's organization?

• In your view, how does the customer typically assess and manage risks when considering large investments?

Customer Interaction Experience/ Communication:

• Can you describe the interactions you and your team had with the customer throughout this project?

• Did the customer have one main point of contact, or were there multiple people from the case company involved?

• How would you assess the quality of communication and cooperation between the case company and the customer during the decision-making process?

• In your opinion, did the quality of communication or cooperation have an impact on the customer's final investment decision?

If the Customer Invested (Group A):

• What do you think were the key reasons the customer decided to proceed with the investment?

• Why do you believe the customer chose case company as their partner?

• Did sustainability come up during discussions?

• How long did the decision-making process take on the customer's side?

• Was the customer considering other suppliers? What made the case company stand out in comparison?

• What role did the case company play in the decision-making process? Did the idea for the project come from the case company or the customer?

• What do you believe were the most important decision criteria for the customer?

• Was there anything specific in the case company's offer that you believe was particularly appealing to the customer?

• Have you received feedback from the customer regarding satisfaction with the decision or the outcome?

• Do you know whether the customer is considering further large investments with the case company in the near future?

• What lessons did you personally or your team learn from this project from the case company's perspective?

If the Customer Did Not Invest (Group B):

• What were the key reasons or challenges that contributed to the decision – internal, financial, or external?

• How long did their decision-making process take?

• Were there external factors, such as market conditions or geopolitical uncertainty, that may have influenced their decision?

• Did the customer eventually go forward with the project through another supplier, or was it cancelled entirely?

• If they selected another supplier, what do you believe were the main differences or advantages that led them away from the case company?

• Did the customer find the case company's proposal sufficiently detailed, or were there areas where they expected more (e.g., financial data, risk management, technical details)?

• How do you feel the negotiation process with the customer went? Was there room for improvement from the case company's side?

• In your view, what could the case company have done differently to turn the customer's decision in our favor?

Final Questions (to Both Cases):

• From your perspective, how do trust, relationship quality, and reliability affect how customers evaluate suppliers?

• How do you think the case company compares to competitors in these areas?

- Did the case company's effort in safety affect the decision of the customer?

• Did you observe any internal resistance or disagreement on the customer's side that may have influenced their decision? If so, what was it about?

• What would you recommend for the case company to improve in its approach to selling large projects?

• Is there anything else you would like to add, or feel is important to mention?

Appendix 2. Interview Questions, Customers

Background information:

- Name
- Company
- Position
- How long have you worked for the company?

Understanding the decision-making process:

- Can you walk me through your organization's decision-making process for large project investments?
- Who were the key decision-makers?
- How do different departments (e.g., operations, sourcing) influence the decision?
- How does your organization assess and manage risks when considering large investments?

Experience with the case company

- Can you describe your interactions with the case company during the decision-making process? Who were your main points of contact?
- Did the communication with the case company affect your decision-making to invest in the large project?
- How would you evaluate the case company's communication and support during the decision-making process? What worked well, and what could have been improved?

Questions only for customers who invested (group A):

- Why did you decide to invest in a large project?
- Why did you choose the case company? (Important to see if sustainability themes will rise)
    - Follow-up option: Can you describe the key factors that led to your decision to move forward with the case company?

- How long did it take for your organization to make the decision?
- Did you consider other companies the case company for the large project? What specific strengths did the case company offer that made it your preferred partner?
- What role did the case company play in your decision-making process? Did the idea for the project come from them or from you?
- What were the most important factors you considered when deciding to invest?
    - Possible follow-up: Which factors, such as cost, technology, quality, sustainability, reliability or relationship with the case company, did you weigh most heavily, and why?
- Was there any specific aspect of the case company's offering that was particularly appealing to you?
- Have you been happy with your decision? Why or why not?
- Would you invest again in a large project with the case company?
- What were your key lessons learned from the large project you did in collaboration with the case company?

Questions for customers who didn't invest (group B):

- Why did you ultimately decide not to invest in a large project with the case company?
    - Follow-up: Were there any specific obstacles or factors that led to this decision?
- How long did it take for your organization to make the decision?
- Were there any external factors, like economic conditions or industry trends, that influenced your decision?
    - Possible follow-up: How did changes in raw material prices, geopolitical tensions, or other market conditions impact your investment decision?
- Did you do the project with another company other than the case company? Or did you not do the project at all?

- What led you to choose another company? What specific differences between the case company and the other suppliers made you decide against partnering with the case company? What led you not to invest?
- Was the company's proposal detailed enough to meet your needs, or did you find certain areas lacking?
    - Follow-up: Were there aspects such as financial details, risk management strategies, or technological specifics that were not fully addressed?
- How did the negotiation process with the case company impact your decision?
    - Possible follow-up: Did you feel that the case company's communication and negotiation process met your needs, or was there room for improvement?
- If you were to consider investing in a large project again, what would the case company need to do differently to gain your business?

Final questions fitting for both groups:

- How does the good relationship and trust, as well as reliability, affect your evaluation of potential suppliers?
    - Follow-up: How does the case company compare to others in this respect?
- Did the case company's effort in safety affect the decision of the customer?
- Did you face any internal resistance or challenges when considering this large project? If so, what were the main concerns?
- What advice would you give to the case company to improve its approach to selling large projects?
- Open word, anything you would like to add?