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# **Delivery Delays from International Suppliers: Management Practises and Associated Costs**

A case study in Strategic Purchasing

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**ABSTRACT:**

The concept of Global sourcing has become an increasingly important strategic approach for organizations seeking cost efficiency, access to specialized supplier capabilities and broader supply markets. However, the increasing complexity of global supply chains has increased organizations' exposure to delivery-related disruptions and operational uncertainty as well. Delivery delays from international suppliers may create operational and cost implications throughout the procurement and production processes, highlighting the effective delay management and supply chain resilience.

The objective of this study is to examine how organizations manage delivery delays from international suppliers and to analyse the associated operational and cost implications. The study was conducted as a qualitative single case study within the procurement organization of a Finnish multinational company operating in the marine industry. Empirical data was collected through semi-structured interviews with nine participants representing operational purchasing, strategic purchasing, supplier development and category management roles.

The findings indicate that delivery delays emerge through a combination of supplier-related factors, internal planning instability and the complexity of global supply chains. Organizations manage delays primarily through reactive operational practices aimed at maintaining production continuity, while proactive strategies were identified as important mechanism for improving long-term resilience and delivery reliability.

The results further demonstrate that delivery delays generate significant operational consequences extending beyond transportation or logistics-related disruptions. In addition, delays create substantial indirect and hidden costs through coordination activities, expedited deliveries, alternative sourcing arrangements and production-related adjustments. Despite these implications, production continuity was frequently prioritized over cost efficiency, making the full financial impact of delivery disruptions difficult to identify and evaluate systematically. The study highlights the importance of improving supplier visibility, strengthening proactive supplier management practices and adopting broader perspective on disruption-related costs in global sourcing environments.

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**KEYWORDS:** delivery delays, procurement, global sourcing, supply chain disruptions, delivery delay management, operational performance, operational and cost implications

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## 1 Introduction

Global supply chain challenges have increased rapidly in recent years, posing growing risks to operational continuity. In response, organizations have diversified their international supplier networks to strengthen supply chain resilience and reduce dependency on individual suppliers. However, while supplier diversification may improve flexibility, it may also encounter different challenges which complicate decision making (Shen et al., 2025, p.1).

Disruptions in global supply chains along with their ripple effects are recognized as major risks to the global economy at both institutional and organizational levels (Herold et al., 2023, p. 2213). Although global sourcing offers significant advantages, it also introduces challenges related to increased supply chain complexity, particularly in the form of delivery-related disruptions (Weele 2010, p. 202-203; Holweg et al., 2011, p. 333). Even relatively small disruptions, such as delivery delays, supplier performance issues or price fluctuations may create new operational consequences throughout the supply chains (O'Brien 2014, p. 65); (Iloranta et al., 2018, p. 73).

As organizations increasingly rely on global suppliers to improve cost efficiency and operational performance, supply chains have become more vulnerable to delivery disruptions, capacity constraints and coordination challenges. In addition, risks related to material availability and supplier performance have intensified placing greater pressure on procurement functions to manage these uncertainties effectively (Nieminen 2025, p. 18). Consequently, procurement functions are required not only to manage purchasing costs but also to ensure delivery reliability and operational continuity across complex global networks. As a result, organizations increasingly seek ways to improve supplier coordination, delivery reliability and supply chain resilience (Herold et al., 2023, p. 2213).

This thesis examines the management of delivery delays from international suppliers and the associated operational and costs implications within a global sourcing environment.

## 1.1 Background of the study

Global competition, increasing customer expectations and rapidly changing market conditions have transformed procurement and the whole supply chain management into strategically important organizational functions (Anwer Al -Shboul 2022, p. 1; Masa'deh et al., 2022, p. 1). To remain competitive, organizations continuously seek ways to improve operational efficiency, reduce costs and strengthen long-term business performance (Masa'deh et al., 2022, p. 1). In response to these pressures, procurement has increasingly adopted global sourcing as a central strategic approach (Cagliano 2012, p. 101; Shoukat et al., 2022, p. 167). Global sourcing strategy enables firms to access lower production costs, specialised supplier capability and broader supply markets (Iloranta et al., 2018, p. 134). As a result, supply chains have become increasingly global, interconnected and operationally complex (Pan et al., 2025, p. 1-2).

Despite the benefits of global sourcing, the increasing globalization of sourcing has also introduced new operational challenges (Moradlou et al., 2021, p. 102; Ngo 2024, p. 840). Contemporary supply chains are frequently affected by supplier-related disruptions, fluctuating production capacity, logistical challenges and quality-related issues that may interrupt material flow and weaken overall operational performance (Ngo 2024, p. 840; Shoukat et al., 2022, p. 167). Delivery delays have therefore become important managerial challenge, particularly in global sourcing environments where longer lead times, multiple supply chain actors and geographically dispersed supplier networks increase vulnerability to disruptions.

In addition to operational consequences, delivery delays generate additional financial implications throughout the procurement and production operations (Haverila et al., 2009, p. 250; Habibi et al., 2025, p. 227) such as production interruptions that generates cost implications (Holweg et al., 2011, p. 335-336). Consequently, organizations are required to balance traditional cost efficiency objectives with delivery reliability, supply continuity and operational resilience (Benton 2021, p. 33-35; Ngo et al., 2024, p. 839). This has shifted procurement and supply chain management from purely

transactional functions toward broader strategic roles focused on risk management, supplier performance and long-term operational stability (Melnyk et al., 2010, p. 33-34; Gangurde 2016, p. 1752).

Previous research has widely examined global sourcing, supply chain disruptions and supplier performance. Existing literature has proposed different sourcing and risk mitigation strategies, including dual sourcing, supplier diversification and supply chain flexibility to manage the associated risks (Shoukat et al., 2022, p. 167; Angkiriwang 2014, p. 50). Furthermore, delivery reliability and delivery performance have been recognised as important supply chain performance measures at both operational and strategic levels (Guiffrida et al., 2008, p. 2149). However, according to Holweg et al., (2011, p. 335); Platts et al., (2010, p. 320) prior research has mainly focused on isolated dimensions of these topics, investigating purchasing costs, inventory management or individual supply chain risks within the field of global sourcing.

Comparatively less attention has been given to how organizations operationally manage delivery delays from international suppliers while addressing broader operational and cost implications. In addition, according to Holweg et al., (2011, p. 333-336) relatively few studies provide a comprehensive assessment of delivery-related challenges, their cost implications for managerial decision making and the dynamic nature of key cost factors. Therefore, there remains a need for research that conceptualizes delivery delays as a form of supply disruption affecting operational performance and cost outcomes within organizations. This research gap is particularly relevant in the current global business environment characterized by increasing supply chain complexity, volatility and uncertainty, both from an operational and managerial perspectives.

## **1.2 Research objectives**

The objective of the study is to examine how organizations manage delivery delays from international suppliers and to analyse the operational and cost implications created by

such delays. The study approaches delivery delays as both an operational and managerial challenge within international supplier relationships. The study is conducted in the context of a case company's procurement organization, where increasing production volumes, supplier capacity constraints and global supply chain uncertainty have increased attention toward delivery-related challenges and their operational consequences. While delivery-related impacts are recognised within the procurement organization, there is limited systematic understanding regarding their broader operational and cost implications.

Although the empirical research is conducted within a single case organization operating in the fields of procurement, the aim of this study is to develop a broader understanding of how organizations manage delivery challenges and respond to their operational and cost-related implications within a global sourcing environment.

As stated, previous research has examined supply chain disruptions, supplier performance and sourcing related costs largely as separate actions. However, there remains limited understanding how organizations simultaneously manage delivery delays together with their broader operational and cost consequences. Therefore, this study aims to provide a more comprehensive understanding of delivery disruptions within international supplier relationships.

To achieve the objectives of the study, the following research questions are addressed:

1. How do organizations manage delivery delays from international suppliers?
2. What operational and cost implications do the delivery delays create?

### **1.3 Definitions of the key concepts**

#### **Procurement**

Procurement refers to the set of processes and activities required to acquire goods and services from external suppliers and ensure their delivery to the intended location (Weele 2010, p. 6; Murray 2009, p. 199).

### **Global Sourcing**

Global Sourcing involves the systematic identification, evaluation and selection of suppliers responsible for delivering the required goods and services internationally (Jacobs et al., 2017).

### **Supply Chain Management**

Supply Chain Management extends the scope of procurement to encompass the entire supply chain and entails the coordinated management of activities, information flows, competencies and financial resources across the chain (Iloranta et al., 2018, p. 51).

### **Supplier Management**

Supplier management refers to the management of suppliers and supplier markets (Iloranta et al., 2018, p. 50).

### **Operational performance**

Operational performance in supply chain context refers to an organization's ability to maintain efficient and responsive operations in a dynamic and competitive environment (Masa'deh 2022, p. 3-4).

### **Delivery reliability**

Delivery reliability is defined as the company's ability to provide the demanded customer orders on schedule regardless of variations in product types or order volumes (Anwer AL-Shboul 2022, p. 5).

### **Hidden Costs**

Hidden costs include costs related to coordination, exchange rate fluctuations, regulatory changes and increased managerial complexity. These costs are often embedded in overhead structures and therefore remain underestimated in sourcing decisions (Holeweg et al., 2011, p. 335-336).

### **Total Cost of Ownership (TCO)**

Total Cost of Ownership (TCO) represents a managerial philosophy that seeks to understand the total costs associated with acquiring goods or services from a specific supplier (Ellram 1993, p. 49).

## **1.4 Structure of the study**

This study comprises five main sections. The introduction provides background information and defines the research objective, problem and questions. Following this, the theoretical literature review is presented. The theoretical literature review aims to enhance the reader's comprehension of current discussion in the field of global supply chain management and procurement practices, identifying a range of challenges related to delivery disruptions, operational and cost implications of delivery delays.

Section three introduces the research methodology, including the research design, sample selection, data collection methods and analytical approach. Section four presents the empirical findings of the study in relation to the research questions and theoretical framework. Finally, section five summarizes the main findings of the study and discusses

the theoretical and practical implications, addresses the limitations of the research and provides suggestions for future research.

## **2 Procurement Practices and Delay Management in Global Supply Chains**

This chapter reviews the theoretical background relevant to delivery delay management in global sourcing environment. The term procurement has a different meaning in different studies, and a variety of concepts and terms such as, procurement, purchasing, sourcing and supply management are employed within the field of purchasing (Weele 2010, p. 8); (Iloranta et al., 2018, p. 49). In this study, the term procurement is being used specifically to refer to strategic purchasing activities.

### **2.1 Procurement**

Procurement has long been important part of the supply chain functions (Gangurde 2016, p. 1752). Procurement refers to the set of processes and activities required to acquire goods and services from external suppliers and ensure their delivery to the intended location (Weele 2010, p. 6; Murray 2009, p. 199). Procurement involves evaluating available alternatives and making strategic decisions that aligns with purchasing activities with organizational objectives (Murray 2009, p. 199) as well as helps to ensure continuity and efficiency in organizational activities (Nieminen 2025, p. 12-14). More broadly, procurement encompasses the planning, implementation, control and evaluation of both strategic and operational decisions to support the firm's long-term performance (Glock et al., 2011, p. 149).

Procurement contributes to corporate planning, enhances cross-functional integration and most importantly act as a vital link between suppliers and company (Chen et al., 2004, p. 505). In addition, it encompasses activities related to purchasing functions, inventory management, logistics and transportation as well as incoming inspection, quality control and assurance (Weele 2010, p. 6). As purchased inputs represent a substantial share of organizational costs, procurement has a critical role in operational performance and overall success (Nyamah et al., 2023, p. 78).

The operation, maintenance, management, and development of an organization require not only various goods and services but also expertise and knowledge from outside of the organization. Therefore, procurement professionals seek to leverage opportunities within supplier markets that the needs of the end customer are satisfied (Iloranta et al., 2018, p. 53).

Additionally, procurement is closely linked to the firm's value chain (Weele 2010, p. 6). Value chain emphasizes the creation of value through interconnected activities (Iloranta et al., 2018, p. 51). These activities may consist of raw materials, suppliers and other consumable items as well as capital assets such as machinery and other equipment. These examples illustrate that purchased inputs contribute to both primary and support activities within the value chain (Weele 2010, p. 6).

### **2.1.1 Procurement process**

Nieminen (2025, p. 73) provides a comparison between traditional and modern procurement process. Traditional procurement process approach is reactive, with purchasing activities initiated after a product or service has been sold and driven by predefined demand. In contrast, modern procurement process approach adopts a more strategic and proactive approach, emphasizing continuous development of solutions to meet customer needs and support long-term sustainable business objectives. A central task of procurement is to align the organization's core competencies with supplier market opportunities enabling long-term value creation (Nieminen 2025, p. 73)

According to (Kreye 2023, p. 104) the procurement process consists of multiple stages and is inherently cyclical in nature. Activities are repeated as contracts expire and learning from previous procurement cycles are used to improve future processes (Kreye 2023, p. 104). The procurement process can be presented as a simplified sequence of activities including the need identification, supplier selection, contracting, ordering, delivery control, evaluation and follow up. Each stage, also illustrated in the table 1,

involves multiple tasks and decision-making factors (Nieminen 2025, p. 74-75); (Weele 2010, p. 8-9). More generally, procurement processes include planning, execution and assessment phases (Chicksand 2012, p. 468). Procurement planning relies on various inputs and analytical techniques such as cost-benefit analyses related to purchasing, manufacturing or out-sourcing decisions (Moma 2022, p. 83). Effective procurement requires the integration of diverse expertise and strong coordination across organizational functions. Close collaboration between internal stakeholders and external suppliers is essential for successful implementation (Nieminen 2025, p. 76).

Procurement activities are commonly divided into strategic and operational purchasing. As illustrated in the table 1, strategic purchasing focuses on long-term objectives, such as supplier relationship, sourcing strategies and the development of procurement practices in alignment with the organization's overall business strategy (Nieminen 2025, p. 13-14). Operational purchasing in turn focuses on routine activities including placing orders in accordance with established contracts and managing delivery control and day-to-day purchasing tasks (Iloranta et al., 2019, p. 49; Nieminen 2025, p. 75).

Generally, purchasing refers to the transactional process of buying goods and services, and procurement encompasses a broader set of activities (Weele 2010, p. 8). Continuous collaboration between strategic and operational purchasing is essential to ensure efficiency in daily operations (Nieminen 2025, p. 75).

Stage	Description of Activities	Procurement / Purchasing
Need Identification	Determining the quality and volume of needed items	Procurement
Supplier Selection	Evaluating and selecting the most suitable supplier for the required materials	Procurement
Contracting	Preparation and negotiating with the supplier to establish an agreement and	Procurement

	formalize the contract terms and conditions	
Ordering	Placing an order with the selected supplier	Purchasing
Delivery Control	Monitoring the status of purchase order to ensure on-time delivery	Purchasing
Evaluating / Follow-up	Reviewing and evaluating the purchasing process	Purchasing

**Table 1.** Stages of the procurement process. (Iloranta et al., 2019, p. 49; Nieminen 2025, p. 75).

### 2.1.2 Global sourcing

While procurement encompasses all activities related to acquiring and managing the resources required for organizational operations (Kreye 2023, p. 103), sourcing focuses more specifically on identifying, evaluating and selecting suppliers. In this context, sourcing involves decisions related to the allocation of activities and responsibilities across organizational boundaries (Power et al., 2006, p. 1). Furthermore, global sourcing refers to strategic sourcing activities conducted within an increasingly globalized business environment and is commonly incorporated into organizations' international procurement strategies. The primary objective of global sourcing is to exploit global efficiencies in the delivery of a products or services (Weele 2010, p. 202).

Global sourcing can be defined as the proactive coordination and integration of materials, processes, designs, technologies and suppliers across global markets (Weele 2010, p. 202). The growth of global sourcing has been attributed to several factors (Oshri et al., 2015, p. 11). International sourcing enables access to advanced technologies, expands the pool of potential suppliers and allows firms to utilize specialized

resources. Furthermore, it can stimulate domestic competition and enable organizations to benefit from favourable economic and fiscal conditions (Cagliano 2012, p. 101).

Additionally, according to Trent et al., (2002, p. 70), the primary advantages of global sourcing relate to lower unit costs, access to alternative suppliers and increased competition among suppliers as well as opportunities to enter new markets. Oshri et al., (2015, p. 12) moreover identify that access to suppliers' capabilities and innovative potential provide benefits from global sourcing, particularly in cases where such competencies would be costly or difficult to develop internally.

Based on a company's needs and predefined specifications different sourcing strategies can be applied either individually or in combination. Single sourcing refers to a situation in which one supplier provides a specific purchased item. In some industries, the supplier may be the only available option. This situation is called sole sourcing. In contrast, multisourcing involves the use of two or more independent suppliers and is typically adopted in competitive markets where switching costs are low and the main priorities include price and reliability. A third approach, parallel sourcing refers to a strategy in which an organization uses different suppliers for the same component across different product models. As a result, the organization retains the ability to shift to the alternative supplier since the supplier already provides the same component for other models (Kreye 2023, p. 104-105).

Relying on a single supplier can be an ideal strategy offering simplicity and efficiency. However, this strategy increases also exposure to risks. If the supplier is unable to meet its obligations, the company may face operational disruptions. Furthermore, dependence on a single supplier can result in high switching costs as replacing the supplier often requires substantial time and resources. In contrast, multisourcing can reduce risks by distributing dependence across multiple suppliers. If one supplier underperforms, alternative supplier can help ensure continuity (Power et al., 2006, p. 79).

While global sourcing focuses on the geographical location from which products are obtained, outsourcing refers to the organizational decision to transfer activities to an external provider (Power et al., 2006, p. 2-3). These concepts often overlap, as globally sourced products can be outsourced to international suppliers (Oshri et al., 2015, p. 8). Cost savings remain a primary driver of outsourcing decisions although effective management in uncertain environments is also a critical capability (Power et al., 2006, p. 4-8).

The development of sourcing strategies that account for both cost considerations and supplier delivery reliability has become an important area of research (Shoukat et al., 2022, p. 167). An established supplier network enables organization to adjust production capacity more flexibly and cost-efficiently in response to demand fluctuations (Oshri et al., 2015, p. 12). Furthermore, the effectiveness of sourcing strategies depends heavily on the strengths of buyer-supplier relationships. Identifying and selecting appropriate suppliers plays a critical role in enhancing value creation and reducing exposure to risk (Oshri et al., 2015, p. 158).

## **2.2 Supplier management and supplier performance**

Advanced and systematic procurement practices, including supplier relationship management and internal integration have been shown to improve procurement outcomes and financial performance (Nieminen 2025, p. 16). Furthermore, procurement supports the sustainable business performance by enhancing both operational efficiency and organizational resilience (Nieminen 2025, p. 22-23).

Suppliers play a crucial role throughout the entire product lifecycle. From the procurement of raw materials to supporting production ramp-up and identifying alternative materials in changing market conditions, effective collaboration between organization and their suppliers is essential for achieving operational efficiency and maintaining product performance (Shoukat et al., 2022, p. 187). Supplier management and

supply management have central role in procurement. Supplier management refers to the management of suppliers and supplier markets, whereas supply management denotes a more systematic approach to utilizing and developing supplier markets and managing supplier relationships (Iloranta et al., 2018, p. 50).

Supply chain management (SCM) can be defined as the strategic alignment and integration of activities within a company and across supply chain partners to enhance the long-term performance of both individual organizations and the entire supply chain (Chicksand 2012, p.469). At its core, SCM adopts a systems perspective, managing the flow of information, materials and services from raw material suppliers to end customers (Jacobs et al., 2017, p. 7). Its strategic role involves integrating buyers and suppliers to improve reliability and flexibility within the supply processes (Gangurde 2016, p. 1752). One of the important goals of supply chain management is to improve delivery performance (Guiffrida et al., 2008, p. 2149).

Supplier evaluation systems have a positive impact on the buyer-supplier relationships with these relationships ultimately have a positive impact on financial performance. In the long-term failure to measure supplier delivery performance in financial terms may impede the capital budgeting process which is necessary to support the improvement of supplier operations within a supply chain (Guiffrida 2008, p. 2150). Organizational performance is closely linked to supply chain capabilities as responsiveness and related practices have been shown to positively impact company performance (Rini 2024).

### **2.2.1 Supplier selection and evaluation**

Supplier selection is widely regarded as one of the most critical tasks in strategic procurement. The objective is to identify the most suitable supplier rather than simply selecting the one offering the lowest price, the shortest delivery time or the highest technical performance (Bhutta et al., 2002, p. 134). Procurement can contribute to product and service innovation by involving suppliers early in the development process to leveraging their expertise (Nieminen 2025, p. 22-23).

Developing effective supplier relationships requires significant effort and can be viewed as a multi-criteria decision-making problem (Bhutta et al., 2002, p. 126). Organizations increasingly leverage suppliers' capabilities in product development and access to specialized resources which has further elevated the strategic importance of supplier relationships. As a result, firms place greater emphasis on evaluating their supply base and developing strategies for its effective management (Gangurde 2016, p. 1752).

Consequently, supplier selection is typically based on multiple evaluation criteria. These include the supplier's ability to meet quality requirements, provide timely and accurate information, adhere to delivery schedules and offer support in urgent situations. These factors, also listed in the table 2, reflect broader expectations related to reliability, responsiveness and transparency within procurement process (Haverila et al., 2009, p. 247-248).

Task-Related Decision factor:	Description:
Quality Compliance	Supplier's ability to meet required standards
Early Issue Warning	Providing early warnings about emerging issues
Honesty & Transparency	Honesty and transparency in communications
Delivery Continuity	Maintaining deliveries under shortage conditions
Low Defect Rates	Sustaining low defect and rejection rates
Schedule Adherence	Following agreed delivery schedules
Timely Information	Supplying relevant and timely information
Urgent Support	Offering support in urgent situations

**Table 2.** Task-related decision factors. (Haverila et al., 2009, p. 247-248).

Effective supplier selection and relationship management are essential for ensuring supply chain performance and maintaining organizational competitiveness. Strong buyer-

supplier relationships form the foundation of strategic sourcing and enable companies to respond more effectively to operational challenges (Walton et al., 1997).

### **2.2.1.1 Delivery reliability and operational performance**

Supplier delivery reliability is increasingly recognized as a crucial factor influencing organizational competitiveness (Wang et al., 2014, p. 499) and an important indicator in global supplier selection (Shoukat et al., 2022, p. 187). It refers to a supplier's ability to deliver the correct quantity of products at the agreed time and according to specified requirements. More broadly, delivery reliability reflects the ability to meet customer demand consistently regardless of variations in order volumes or product types (Anwer AL-Shboul 2022, p. 5).

Supplier reliability is a multidimensional concept that includes timely delivered, accuracy of delivered items, product quality and the fulfilment of ordered quantities (Walton et al., 1997). A fully reliable supplier delivers exactly the amount requested by the customer whereas an unreliable supplier may provide less than the ordered quantity. As a result, low supplier reliability can lead to disruptions in production and operational inefficiencies (Wang et al., 2014, p. 499).

In many industries supplier delivery reliability is considered even more critical than cost, as delays can have significant negative impact on production schedules and overall supply chain performance (Wang et al., 2014, p. 499). Delivery disruptions often result in increased operational costs for example, from transportation, inventory buffering and production interruptions. However, it is generally assumed that the cost of reliability improvement for a manufacturer increases as the level of effort devoted to improvement rises. In other words, greater investment in activities aimed at improving supplier reliability typically leads to higher costs (Wang et al., 2014, p. 501)

Achieving complete delivery reliability is challenging. For example, one hundred per cent on-time delivery can only be achieved under highly controlled conditions where

delivery lead times fully accommodate process variability (Grout 1999, p. 154). In global supply chains additional factors such as long lead times, transportation complexity and external uncertainties further complicate reliability (Platitas et al., 2025, p. 3). Therefore, maintaining multiple and high standards on supplier delivery reliability is vital. (Asawawibul et al., 2025, p. 5).

Operational performance in supply chain context refers to an organization's ability to maintain efficient and responsive operations in a dynamic and competitive environment. In addition, it is commonly reflected to cost efficiency, delivery performance and process flexibility. In global supply chains where activities are highly interconnected and dependent on supplier performance delivery delays may significantly disrupt production scheduling. As a result, delays from international supplier can weaken operational continuity and impair the organization's ability to meet customer demand effectively. (Masa'deh 2022, p. 3-4).

Product condition should also be considered a critical mediating factor influencing customer satisfaction and to meet customer demand (Asawawibul et al., 2025, p. 5). To remain competitive in business, suppliers are required to produce product of a quality acceptable to customers and deliver the products at competitive cost with highly reliable delivery times (Angkiriwang et al., 2014, p. 50). Additionally, product that are reliable and safe can mitigate the negative effects of higher costs (Asawawibul et al., 2025, p. 5).

Therefore, organizations seek to purchase products from suppliers whose quality meets the specified requirements because consistent quality reduces the need for extensive quality inspections and thus lowers inspection-related costs. The required services such as technical assistance and the availability of spare parts and repair services also form an essential component of the purchasing value proposition (Haverila et al., 2009, p. 249). Ensuring that products are in optimal condition enhances customer satisfaction (Asawawibul et al., 2025, p. 5), and this can be ensured through collaboration and coordination of with different stakeholders (Angkiriwang et al., 2014, p. 50).

### **2.2.2 Buyer-supplier relationships**

Buyer-Supplier relationship (BSR), reflect the dyadic interaction and collaboration between a buying organization and its suppliers (Schmidt 2023, p. 6064). For organizations to perform effectively, they must establish and maintain long-term partnerships with suppliers (Ganguly 2021, p. 247). These relationships can be strengthened through close cooperation, integration of resources and capabilities and alignment of strategic objectives (Schmidt 2023, p. 6064). Long-term buyer-supplier relationships have become increasingly important as companies streamline their supplier base, making performance measurement vital for logistics providers, service suppliers, material providers and distribution industries (Romule et al., 2020, p. 818).

Suppliers are fundamental part of organizational operations and performance. Traditionally, buyer-supplier relationships are often characterized by limited interaction and transactional exchanges. However, in today's global business environment there is an increasing need to move towards closer collaboration and integration. This shift is particularly evident in Just-in-Time (JIT) systems which require suppliers to deliver materials in the correct quantity, quality and at the exact time needed. As a result, supplier performance plays a critical role in determining overall organizational success (Bhutta et al., 2002, p. 126).

Supplier performance can be defined as the extent to which a supplier meets predefined objectives related to costs, quality, delivery and service (Romule et al., 2020, p. 817-818). Evaluating supplier performance enables organizations to differentiate between suppliers and reduce risks such as expected costs, delivery delays and increased complexity arising from global sourcing (O'Connor et al., 2023, p.594).

Supplier performance is commonly assessed using key performance indicators (KPI's) which provide a structured approach to monitoring and improving supplier outcomes. The most frequently used performance dimensions include product quality, delivery

performance, responsiveness, flexibility and cost. Among these, delivery performance is particularly critical as delays can disrupt production schedules, increase operational costs and negatively impact overall supply chain performance (Romule et al., 2020, p. 817-818). Additionally, sustainability has become an important element in supplier selection as well as in supplier performance evaluation (Etse et al., 2023, p. 525-526).

Effective supplier performance management requires a systematic and continuous approach particularly in global supply chains where complexity and uncertainty are high. Strengthening buyer-supplier relationships and improving coordination across the supply chain can enhance performance outcomes and reduce delivery disruptions (Romule et al., 2020, p. 817-818).

### **2.3 Delivery delays and supply chain disruptions**

Recent research highlights the importance of developing innovative strategies to mitigate supply chain disruptions (Habibi et al., 2025, p. 227). To effectively address supply chain risks, organizations must identify exactly where vulnerabilities occur within the supply chain. Globally operating companies need to continuously review and adapt their supply management process in response to the specific uncertainties they face. For example, companies relying on key suppliers in unstable or rapidly changing regions must develop contingency plans and identify alternative strategic partners. In addition, maintaining a close overview of inventory levels and regularly evaluating supplier operations are essential for effective risk management (Benton 2021, p. 33-35).

In this context, risk assessment plays a critical role in supply chain management. According to Christopher (2004, p.1), in contemporary markets characterized by uncertainty and turbulence supply chain vulnerability has emerged as a critical concern for many organizations. Increasing global sourcing and the continuous effort to streamline supply chain operations have contributed to greater complexity and heightened exposure to risks (Christopher 2004, p.1).

Supplier production processes are often subject to uncertainty due to capacity limitations, variability in production conditions and quality differences. As a result, the delivered quantity may differ from the originally ordered amount leading to operational inefficiencies and delays (Wang et al., 2014, p. 501). However, in some cases, organizations create bottleneck situations themselves through product design and development decisions. For example, a component may be specified in such a way that it can only be procured by a single supplier thereby increasing dependency and supply risk (Iloranta et al., 2018, p. 121). Even when the monetary value of such components is low, their absence can disrupt entire production processes and create significant operational bottlenecks (Iloranta et al., 2018, p. 85).

As a result, organizations must focus on identifying, assessing and mitigating risks by developing more resilient supply chains (Christopher 2004, p.1). These include restructuring supplier networks, improving coordination and developing strategies to manage uncertainty and reduce the impact of disruptions in global supply chains (Herold et al., 2023, p. 2213). Supply chain resilience refers to the ability of a supply chain to remain flexible and agile in response to external disruptions and changing conditions (Niu et al., 2024, p. 2). Achieving resilience requires proactive risk assessment and continuous monitoring of supply chain activities. In this context, the proactiveness of procurement is important (Nieminen 2025, p. 18). Systematic risk assessment involves continuously observing and evaluating potential risks within the supply chain, and the supplier monitoring is a key component of the process. In addition, supplier monitoring refers to the actions undertaken by organizations to assess supplier performance and behaviour, ensuring alignment with contractual requirements and strategic objectives (Sadeghi 2022, p. 433).

Supply chain managers aim to achieve integrated, efficient and responsive supply chain operations. This requires balancing cost efficiency with service performance and the ability to respond to disruptions. Improved coordination of international processes

combined with transparent information flows across supply chain partners can significantly enhance these capabilities (Christopher 2004, p.1). Managing supply chain disruptions also requires the development of preparedness and crisis management plans. These plans should be regularly tested to ensure effective response and recovery capabilities as well as to identify potential weaknesses before disruption occurs (Carter et al., 2008, p. 366-367). In addition, organizations must adapt to emerging challenges such as supplier disruptions, sustainability requirements and the increasing role of digitalization in supply chain operations (Bals et al., 2019 p. 1). Building a resilient and agile supply chains has therefore become a key objective in modern supply chain management (Carter et al., 2008, p. 366-367).

According to (Melnik et al., 2010, p. 36-38) previous research suggest that well- and carefully designed supply chains have traditionally focused on achieving lower costs, faster delivery times and improved quality. However, in today's complex business environment these objectives are no longer sufficient. Supply chains are evolving from cost-driven systems toward value-driven systems that support multiple performance dimensions. These include not only cost efficiency and delivery performance but also resilience, flexibility and long-term competitiveness. Thus, the purpose of supply chains is to improve one or more of the following six objectives below in the figure 1 (Melnik et al., 2010, p. 36-38).



**Figure 1.** Supply chain outcomes and key design traits (Melnyk et al., 2010, p. 37).

Not all the objectives need to be emphasized in every part of the supply chain. However, focusing only on one objective makes it difficult to achieve competitive advantage in today's business environment (Melnyk et al., 2010, p. 36-38). Understanding and managing risks is therefore a critical element of supplier management (O'Brien 2014, p. 65); (Iloranta et al., 2018, p. 73). In response to increasing uncertainty organizations may also reconsider strategic decisions such as supplier selection in order to reduce exposure to global supply chain disruptions (Moradlou et al., 2021, p.102).

Managing supplier-related challenges requires continuous monitoring and active coordination. A substantial portion of procurement professionals' time is spent negotiating terms, resolving operational issues and ensuring timely deliveries. In stable conditions organizations tend to rely on existing suppliers. However, in rapidly changing environments the ability to identify, evaluate and switch between suppliers becomes a critical capability (Iloranta et al., 2018, p. 85).

### **2.3.1 Reactive and proactive mitigation practices**

Flexibility is a key strategy for maintaining uncertainty in supply chains (Angkiriwang et al., 2014, p. 54). With the high probability that customers will suddenly increase, reduce, cancel or move forward their orders, supply chain partners need to be more flexible in many respects. This may include the need to change capacity levels, to use different transportation methods, to switch supplier or to deal with small lot sizes (Angkiriwang et al., 2014, p. 50). To manage delivery delays and their operational implications, organizations implement both reactive and proactive strategies (Angkiriwang et al., 2014, p. 54).

Reactive strategies focus on mitigating rather than reducing uncertainty by creating buffers that protect operational efficiency. Common approaches include safety stock and

safety lead times, which enhance product availability and responsiveness at the cost of increased inventory. Capacity buffers and supplier redundancy further improve flexibility ensuring the ability to respond to demand fluctuations and supply disruptions, although often with higher costs (Angkiriwang et al., 2014, p. 54-55).

Proactive strategies focus on enhancing supply chain flexibility through deliberate changes in product design, processes and network structures as well as through the development of collaborative supplier relationships. Key approaches include use of component commonality and postponement, which enable firms to better manage product variety and demand uncertainty. Risk pooling and contractual practises, such as lead time reduction enhances responsiveness and adaptability. Additionally, the use of alternative transportation routes and modes strengthens the ability to respond to disruptions and urgent changes. Overall, these strategies highlight the importance of integrating risk management into procurement and supply chain decision-making (Angkiriwang et al., 2014, p. 54-56), while additionally addressing cost considerations and improving delivery reliability.

## **2.4 Cost implications of delivery delays**

The primary objective of a firm is to generate profit, and the role of procurement is to acquire required goods as cost-effectively as possible while ensuring the quality, delivery performance, lead times and reliability (Haverila et al., 2009, p. 248). Companies have increasingly prioritized the reduction of total costs in procurement while recognizing that supplier evaluation cannot rely solely on purchasing price (Gangurde 2016, p. 1752). Therefore, procurement is responsible for managing both direct and indirect costs and monitoring and mitigating supplier-related risks (Nieminen 2025, p. 22-23). Depending on the industry, externally sourced resources account for over fifty percent of total costs (Iloranta et al., 2018, p. 21-22), highlighting the strategic importance of procurement (Nieminen 2025, p. 12-14). Since it represents a major share of total costs, reductions in purchasing expenses can directly enhance a firm's financial performance (Ganguly 2021, p. 247). Through cost efficiency and value creation across the

supply chain, procurement contributes to organizational competitiveness and long-term performance (Nieminen 2025, p. 12-14).

Contemporary supply management emphasizes a broader perspective where decision-making considers multiple cost elements beyond the initial purchasing price or acquiring cost. A lower initial purchase price may conceal higher long-term costs related to transportation, lead times, customs duties, quality issues and coordination efforts (Shabani 2019, p. 57). Therefore, organizations are encouraged to evaluate supplier based on the total cost of ownership (TCO) rather than price alone (Weele 2010, p. 6).

#### **2.4.1 Total cost of ownership**

Recent developments in procurement have increased the importance of TCO, driven by factors such as greater emphasis on quality, intensified global competition and the growing significance of purchasing expenditures (Ellram 1993, p. 49). TCO is a management accounting approach that enables organizations to evaluate the comprehensive costs associated with a supplier relationship using activity-based costing principles (Shabani 2019, p. 57).

TCO represents a comprehensive cost evaluation approach that captures all costs associated with acquiring, operating and maintaining supplier relationship throughout the product lifecycle (Panjaitan 2024, p. 1). These costs may originate from various stages of the supply chain and can be divided into three categories (Iloranta et al., 2018, p. 154). Pre-transaction costs may include expenses related to investigating and qualifying sources or adding a new supplier to the company's system. Transaction costs by contrast encompass the purchase price as well as associated expenses such as delivery and inspection. Post-transaction costs cover elements such as line fallout, rework of parts or finished goods due to defective parts, cost of returns and warranty work that the firms must perform.

In identifying critical cost elements, companies must focus on significant cost items across all stages of procurement process including pre-transaction activities from the time of idea conception or order requisition to order placement to receipt and post transaction flows, receipt to ultimate disposal by the firm or end customer (Ellram 1993, p. 49). Evaluating the TCO is a critical tool for understanding the full costs involved in operating the firms' entire supply chain (Ellram 1993, p. 49).

In addition to providing a conceptual framework, TCO can also be operationalized through structured cost classification models. For instance, (Ellram et al., 1993, p. 167) identify key cost-driving activities such as communication, delivery management, price, quality and service. These activity-based categories enable organizations to systematically analyse how costs are generated across supplier relationships. Such classification improves cost transparency and supports more effective monitoring and evaluation of supplier performance as it links costs to specific operational activities and highlights their variability over time (Ellram et al., 1993, p. 167).

Unlike, traditional procurement approaches which often focus primarily on purchase price, TCO emphasizes long-term cost implications of source decisions. In many cases, the total life cycle costs of a product or supplier relationship exceed the initial acquisition cost. Although TCO is not fully standardized method, it provides a structured framework for analysing both direct and indirect procurement costs (Iloranta et al., 2018, p. 152-153).

#### **2.4.1.1 Hidden costs**

Cost reduction is one of the primary drivers of global sourcing. However, the expected cost savings may not always materialize as global sourcing involves a trade-off between lower production costs and higher transaction and coordination costs (Iloranta et al., 2018, p. 228). While international suppliers may offer lower unit prices additional costs related to transportation, lead times and coordination can increase the

total cost of procurement (Platts et al., 2010, p. 320-321). Supplier selection in global sourcing therefore extends beyond price considerations and includes factors such as quality, service, flexibility and delivery performance (Holweg et al., 2011, p. 335). In practice, organizations often face a trade-off between reliable but higher-cost local suppliers and lower-cost but less predictable international suppliers (Shoukat et al., 2022, p. 167). To provide better understanding of cost implications in global sourcing, costs can be categorized into static, dynamic and hidden costs (Holweg et al., 2011, p. 335-336).

Static costs represent the most visible and quantifiable elements of sourcing decisions. These include unit prices, transportation, customs duties and other logistics-related expenses. Static costs often form the initial rationale for global sourcing decisions (Holweg et al., 2011, p. 335-336). Dynamic costs arise from demand variability, extended lead times and supply chain inflexibility. These may result in increased safety stock, stockouts, excess inventory and costly expedited shipments. Additionally, long forecasting horizons as well as transport lead times may result in lost sales, excess inventory or costly expedited shipments. Delivery delays can significantly amplify these costs by disrupting production schedules and reducing responsiveness (Holweg et al., 2011, p. 335-336).

Hidden costs are less transparent but can have substantial impact. Hidden costs include costs related to coordination, exchange rate fluctuations, regulatory changes and increased managerial complexity. In addition, delivery disruptions may lead to indirect costs such as production downtime, reduced service levels and decreased operational efficiency. These costs are often embedded in overhead structures and therefore remain underestimated in sourcing decisions (Holweg et al., 2011, p. 335-336).

The characteristics of modern procurement process can be conceptualized through a distinction between on-going and one-time costs. On-going costs arise regularly throughout the supplier-buyer relationship and are typically associated with purchasing transaction and supplier relationship management activities. On-time costs occur

primarily during the initiation phase of the supplier relationship (Platts et al., 2010, p. 321-323). The total amount of the costs explained above might outnumber the purchasing price (Johnson et al., 2013).

Price alone does not determine the overall cost-effectiveness of procurement. Total costs must incorporate all relevant supplier-related factors to determine the realized unit cost across different order quantities (Smytka 1993, p. 43-44). Cost savings typically arise from economies of scale achieved through supplier production volumes or efficiency gains from superior expertise and capabilities (Iloranta et al., 2018, p. 157), and identifying the minimum point on the total cost curve enables the calculation of the economically optimal order quantity and overall purchasing cost (Smytka 1993, p. 43-44). Effective total cost management not only improves cost transparency but also supports more strategically aligned and economically sustainable sourcing decisions (Smytka 1993, p. 42). Contemporary supply management approaches emphasize that decision-making extends beyond simple price-based criteria when assessing a supplier's competitiveness (Shabani 2019, p. 57).

The significance of considering total cost implications in procurement decision-making and supplier selection depends on the nature and scale of the acquisition. The Table 3 illustrates one approach to clarifying criteria for procurement decisions (Iloranta et al., 2018, p. 157).

Main Criterion:	Short Description:
1. Price Only	The decision is based on the purchase price. Suitable when requirements are minimal or the product is highly standardized
2. Intuition, Preferences & Habits	The choice relies on familiarity, values or small perceived differences between available options

3. Objective Comparison	The decision uses objective information, specifications and acquisition costs but indirect cost effects are not considered
4. Ad Hoc Total Cost Calculation	The total cost impacts of alternatives are calculated case by case
5. Formal Total Cost Calculation	The company has a defined procurement decision process where available information including total cost impacts is systematically assessed
6. Systematic Monitoring & Control of Total Costs	Total cost calculations are continuously utilized in supplier management and are being evaluated and monitored in the entire procurement process
7. Regular Assessment of Risk & Threat Impacts	Broader social, political and environmental risks and their mitigation are regularly evaluated and priced as part of the total costs.

**Table 3.** Total cost of procurement decisions. (Iloranta et al., 2018, p. 157-158).

In most organizations day-to-day procurement decisions typically fall within categories from one to four, in the table 3. Information generated through a total cost perspective is particularly valuable for financial acquisitions and for purchases that involve substantial indirect costs. Although the process can be time-consuming, it provides precise insights into the cost implications of various factors (Iloranta et al., 2018, p. 158-159).

The material flow is managed and controlled from suppliers through to end customers and material management refers to the coordination of purchasing, warehousing and distribution activities within a firm. The importance of purchasing and material management has increased considerably as the share of materials-related expenditures in firms' cost structures has grown over recent years. At the same time, the companies

have aimed to minimize inventory levels while reducing lead times. Achieving these objectives requires the efficient organization and management of material-related operations. The primary objectives of material management are to sustain an acceptable service level while minimizing the level of material-related costs. The material management costs, also illustrated in the table 4 cover the costs incurred by the company for materials. Therefore, it is always necessary to consider how procurement decisions affect costs (Haverila et al., 2009, p. 443-444).

Cost Component:	Description:
Cost of Purchased Materials	Price of raw materials
Procurement Costs	Expenses for ordering and purchasing materials
Transportation and receiving	Costs for shipping, receiving and quality checking
Inventory Holding Costs	Costs of storing materials & warehousing
Distribution Costs	Expenses for moving materials within the company
Material Error Costs	Costs due to defective materials
Stockout Costs	Costs resulting from insufficient inventory (production delays)
Return Costs	Costs from handling complaints or returned materials

**Table 4.** Material management costs. (Haverila et al., 2009, p. 443-444).

Early and late deliveries introduce waste in the form of excess cost into the supply chain. Early deliveries contribute to excess inventory holding costs while late deliveries may contribute to production stoppages costs and lost sales. To protect against untimely deliveries supply chain managers often inflate in process inventory levels and production flow buffers. These actions can contribute to excess operating and administrative costs (Guiffrida 2008, p. 2150).

Close collaboration with suppliers plays a significant role in achieving cost savings. Collaborative cost management allows companies to allocate resources more effectively to their core areas of expertise (Tummala et al., 2006, p. 180). In addition, cost-efficiency in logistics operations constitutes a critical determinant of overall supply chain performance as it enables organizations to reduce operational costs while sustaining a high level of service. Cost optimization can be achieved through the rationalization of transportation process (Tummala et al., 2006, p. 179-180).

## **2.5 Theoretical framework of the study**

This section synthesizes the theoretical concepts discussed in the previous literature review and develops the theoretical framework guiding this study. The purpose of the framework is to explain how procurement practices, supplier performance, internal planning processes and global sourcing conditions collectively influence the emergence and management of delivery delays in international supply chains.

The first dimension of the framework concerns the increasing complexity created by global sourcing. Existing literature suggest that organizations rely on international suppliers to achieve lower purchasing costs, access specialised capabilities and improve sourcing flexibility (Weele 2010, p. 202; Trent et al., 2002, p. 70). Global sourcing may also increase competition among suppliers and enable firms to benefit from global market opportunities. However, these opportunities simultaneously increase supply chain complexity and organizational dependency on supplier performance. Longer lead times, geographical distance and reduced operational visibility expose firms to higher levels of disruption risk (Christopher 2004, p.1; Holweg et al., 2011, p. 333). As a result, procurement activities increasingly operate in environments characterized by uncertainty, limited transparency and complex interdependencies between multiple supply chain actors.

The second dimension of the framework concerns supplier performance and supplier-related risk factors. Supplier evaluation literature emphasizes that supplier selection should not be based solely on price, but rather on combination of quality, delivery

performance, flexibility and other capabilities (Bhutta et al., 2002, p. 134). Haverila et al., 2009, p. 247-248). Delivery reliability is particularly critical because unreliable deliveries may interrupt production and create operational inefficiencies (Wang et al., 2014, p. 499). Similarly, quality issues create rework, replacement needs and weaken supply chain performance. Additionally, poor quality increases indirect costs. Supplier performance is therefore understood as multidimensional rather than limited to a single KPI.

At the same time, previous research highlights that supply chain disruptions are not always purely supplier-generated phenomena. Although supplier-related factors such as capacity shortages, machine breakdowns, poor quality performance and weak responsiveness contribute to delivery delays, disruptions may also originate internally within the buying organization or the whole case company. Procurement and supply chain literature has recognized the importance of coordination and information sharing across organizational functions (Christopher 2004, p.1; Nieminen 2025, p. 18). Frequent schedule changes and unstable forecasting and may reduce supplier's ability to perform consistently even when suppliers themselves possess sufficient technical capability.

This relational perspective forms the third dimension of the framework. Buyer-supplier relationships and supplier management practices influence how effectively disruptions are identified, communicated and mitigated. Research on supplier relationship management emphasizes the importance of collaboration, trust, transparency and long-term coordination between the organization and the supplier (Schmidt 2023, p. 6064; Walton et al., 1997). Strong buyer-supplier relationship improves responsiveness and information sharing, particularly during disruptions or urgent situation. Conversely, weak communication and limited transparency may amplify uncertainty and delay corrective actions. Thus, delivery performance is shaped not only by supplier capability itself but also by the quality of interaction and coordination between supply chain partners.

The fourth dimension of the framework concerns procurement decision-making and the trade-off between cost efficiency and supply continuity. Procurement literature

traditionally emphasizes cost reduction and purchasing efficiency. However, contemporary supply management increasingly recognises that supplier selection decisions must account for broader operational and strategic implications beyond initial purchase price (Shabani 2019, p. 57; Iloranta et al., 2018, p. 152-153). The total cost of ownership perspective argues that transportation costs, inventory implications, quality problems, administrative workload and disruption-related costs may significantly alter the true economic impact of sourcing decisions (Ellram 1993, p. 49). Consequently, delivery delays should not be evaluated only through visible logistics expenses but also through hidden operational costs such as production interruptions and coordination work.

The framework also incorporates the distinction between reactive and proactive procurement practices. Existing literature suggests that organizations often respond to delivery delays reactively through expediting, alternative sourcing, schedule adjustments and crisis coordination (Angkiriwang et al., 2014, p. 54-55). While reactive practices may protect short-term operational continuity, they frequently increase costs and do not necessarily address the root causes of disruptions. In contrast, proactive approaches emphasize forecasting accuracy, supplier collaboration, multisourcing strategies, risk monitoring and supplier development activities designed to improve long-term resilience and flexibility (Christopher 2004, p.1; Carter et al., 2008, p. 366-367). The balance between reactive and proactive procurement management therefore becomes a critical capability in global sourcing environments characterised by uncertainty and volatility.

Based on the reviewed literature, this study adopts the view that delivery delays emerge through the interaction between global sourcing complexity, supplier-related constraints and internal organizational practices. Although prior research has extensively examined supplier performance, sourcing strategies and supply chain disruptions separately, less attention has been given to how delivery delays are created through the combination of multiple factors as well as their broader operational and cost implications. Therefore, this study aims to contribute to the existing literature by examining delivery delays as multidimensional operational phenomena.

The theoretical framework developed in this study, also illustrated in the figure 2, provides the basis for analysing how especially procurement professionals experience, manage and evaluate delivery delays in international supplier relationships.



**Figure 2.** Theoretical Framework.

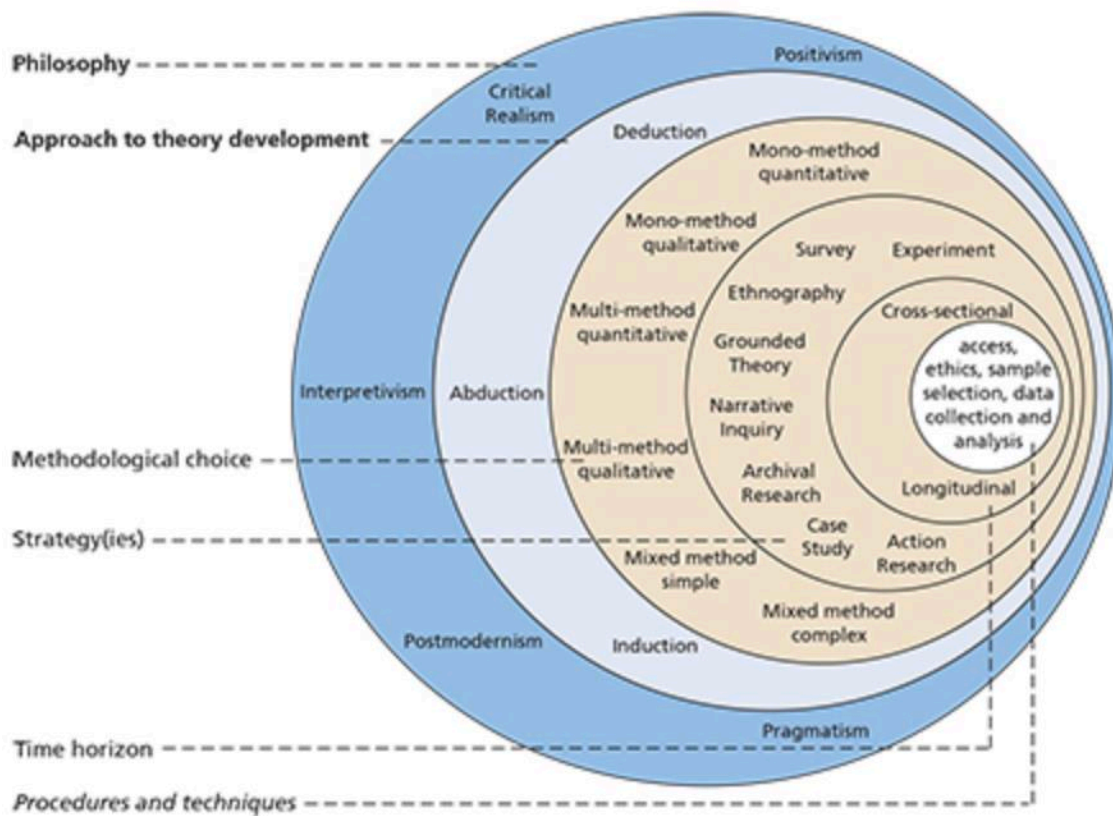
### **3 Research Methodology**

This chapter presents the methodological choices of the study and explains how the empirical research has been conducted. Research methodology describes the research design, data collection and analysis methods while also justifying the suitability in relation to the research objectives. Furthermore, the chapter evaluates the quality of the research in terms of validity and reliability.

In the first section of this chapter, the research philosophy and approach are introduced. The second section outlines the research design employed in the study. The third section presents the case company, followed by a detailed explanation of the data collection process. Finally, the data analysis and the trustworthiness of the study are discussed.

#### **3.1 Research philosophy and approach**

Research philosophy relates to the set of beliefs and assumptions about how knowledge is developed and interpreted. Ontology, Epistemology and Axiology represent three types of research assumptions. These assumptions influence how the research problem is understood, what methods are chosen and how the findings are interpreted as well as how the researcher understands the research context and determines the focus of the study (Saunders 2023, p. 131-133). This study follows the logic of the research onion in figure 3, (Saunders 2023, p. 130), which helps to ensure consistency between different methodological choices. Each layer corresponds to specific components of research and theoretical considerations (Saunders 2023, p. 130). The model is used as a guiding framework to create a coherent research design. Data collection procedures are situated at the core of the research framework that illustrates the range of factors underlying decisions concerning data access, ethical considerations, sample selection and the processes of data collection and analysis (Saunders 2023, p. 128).



**Figure 3.** The “research onion” (Saunders 2023, p. 130).

This study adopts an interpretivist approach which is particularly suitable for exploring complex organizational phenomena. Additionally, interpretivist approach is considered the most suitable for this study as it enables an in-depth understanding of delivery delays from international suppliers through the perspective from different cultural backgrounds, whose interpretations may vary based on the contexts. Furthermore, context is essential, as delays may arise from various reasons and in various stages of the supply chain. As the aim of interpretivist research in the field of business and management is to examine organizations from multiple perspectives and recognizing that individuals in different roles may experience the same organization issues in different ways (Saunders 2023, p. 150), interpretive philosophy is the most suitable for the study.

Interpretivism is a subjectivist approach that recognizes the distinction between human beings and physical phenomena, emphasizing the intricate nature of human experiences (Saunders 2023, p. 147). Interpretivism acknowledges that individuals interpret things differently based on their distinct perspectives and create meanings (Saunders 2023, p. 150). Additionally, interpretivism underscores the socially constructed nature of reality, asserting that experiences are shaped by the humans' perceptions, interactions and cultural contexts (Saunders 2023, p. 162). Since individuals from diverse cultural backgrounds and circumstances experience meanings differently, interpretivists are critical of positivist efforts to identify fixed, universal laws that apply to all (Saunders 2023, p. 150).

This is highly relevant in the context of the study as management of delivery delays and the associated costs can be experienced differently depending on the role, responsibilities and perspective of everyone (Saunders 2023, p. 150). Because the interviewees represent different roles and responsibilities within the same purchasing category, their experiences and interpretations may vary. An interpretivist approach allows these differences to be explored in depth and provides a more nuanced understanding of the phenomenon. The study is based on a subjectivist ontological position meaning that reality is understood as being shaped by individual perceptions and social interactions rather than existing independently of them (Saunders 2023, p. 137). This aligns with the aim of understanding how delivery delays are perceived and managed within the organization.

Furthermore, the researcher's role within the case organization is also acknowledged. As the researcher works within the same purchasing category there are potential risks of bias. However, this is addressed through reflexivity meaning that the researcher remains aware of their position and actively reflects on its influence throughout the research process. In terms of reasoning, the study follows an abductive approach which allows movement between empirical data and existing theory. This approach is particularly suitable for this study as it enables both the identification of new insights and the interpretation of findings in relation to existing literature (Saunders 2023, p. 154-155).

In addition, following the model in the table 4, (Saunders 2023, p. 130-131), this study aims to ensure consistency between the different methodological choices and to provide clear link and justification for each decision, therefore supporting the transparency and coherence of the research design.

### **3.2 Research design**

Interpretivism favours interpretive methods, such as qualitative interviews enabling in-depth exploration of interviewees' experiences behind these occurrences rather than solely statistical patterns (Saunders 2023, p. 147). Supporting this statement, this study adopts a qualitative research design. In the context of supply chain management and in particularly delivery delays, knowledge is not only limited to numerical data but also includes insights from organizational processes, different role's experiences and different culture's perspectives (Saunders et al., 2007, p. 470-472). According to Gerring (2007, p. 45), qualitative research is well suited for exploring complex and content-dependent phenomena specially when the goal is to understand experiences and practises from the participant's perspective.

The purpose of qualitative research is to identify novel and previously unrecognised insights within the data (Nikander, et al., 2010, p.16). The research is exploratory in nature as it focuses on a relative underexplored topic within the case organization. This allows flexibility I the research process and enables new insights to emerge as the study progresses. In addition, qualitative research designs are often associated with interpretivism, as they emphasize the exploration of subjective and socially constructed meanings (Saunders 2023, p. 185).

The research strategy is the methodological link between the philosophy and subsequent choice of methods used to collect and analyse data (Saunders 2023, p. 191). Therefore, this study adopts an emergent case study strategy as the research is guided by an interpretivist philosophy and aims to explore the topic through participants'

perspectives allowing an in-depth examination of the phenomenon within real-life context (Saunders 2023, p. 206). According to Angkiriwang (2014, p. 57-58) case study is an appropriate research method for gathering rich empirical data and thereby to gain deep understanding of the phenomenon in question. The study is based on a single case organization including multiple embedded units, as different roles within the same purchasing category are examined. This enables a more comprehensive understanding of how delivery delays are managed at different organization levels. Furthermore, the time horizon of the study is cross-sectional as the data is collected within a specific time frame.

Additionally, single case study is considered appropriate for this study, as it according to Saunders (2023, p. 208), enables a detailed examination of delivery delays within a specific organizational context aligning with the research objectives. This design allows for a nuanced understanding of how delivery delays are managed and the associated costs are perceived across different levels. The case study strategy is also most often used in exploratory research (Saunders et al., 2007, p. 139), which further supports the selection of a case study for the research strategy.

A key consideration in determining the time horizon of the study is whether to adopt a cross-sectional or longitudinal approach (Saunders 2023, p. 213). Given the scope of this research within a specific organization and the time constraints of the research, a cross-sectional design is most appropriate, as the approach allows for an in-depth examination of the phenomenon.

### **3.3 Case company introduction**

The case company is a Finnish multinational enterprise operating in the marine and energy sectors, offering a broad portfolio of products and related services. This study focuses on the case company's procurement organization operating in the marine sector characterised by high interdependencies with the suppliers. The supplier base consists

of both domestic and international suppliers, and as stated, this study focuses only on international suppliers, enabling more context-specific analysis improving global supplier collaboration and related delivery management challenges.

The case company's procurement organization examined in this study operates as the company's strategic purchasing function and encompasses multiple purchasing categories within it. To ensure analytical depth and feasibility, the study is limited to one purchasing category within the procurement organization. This decision was made because the purchasing categories differ in terms of materials, supplier structures and operational processes. Consequently, the management of delivery delays and associated costs also vary between the categories. Focusing only on a single category enables more detailed and context-specific analysis improving the validity and relevance of the findings. The selected category is characterized by short lead times, high material volumes and dependency on international suppliers, making it particularly relevant for examining the chosen research topic.

### **3.4 Data collection**

Interviews are the most used data collection methods in qualitative research (Kananen 2017, p. 88). In exploratory research, semi-structured interviews with experts in the chosen field are usually applied, as they allow researchers to gain deeper insights into the phenomenon (Saunders et al., 2007, p. 134). In addition, collecting primary data directly from participants can enhance the reliability of research as the researcher is personally involved in the data collection process. Therefore, the primary data for this study was collected through semi-structured interviews.

As stated, purposive sampling was applied in the selection of the purchasing category. In addition, the participants were also chosen through purposive sampling rather than random selection. This approach is considered appropriate for qualitative research aiming to achieve a deeper understanding of the phenomenon under investigation (Patton 2015, p. 52). However, as the study is limited to a single case company and a specific

organizational unit within it, the findings are not intended to be generalized on a broader scale. The participants represent a range of roles, including three operational purchasers, four strategic purchasers, one supplier development engineer and a category manager.

While the category includes five strategic purchasers, only four were available for interviews during the data collection period. In addition, as quality-related aspects were not the primary focus of the study, supplier development engineers were represented by only one interview participant. This purposeful selection strategy was intended to include all relevant stakeholders directly involved in the specific category's supply process ensuring that the data reflected the full scope of decision-making and operational practices.

In qualitative research, a relatively small sample size can be justified through the concept of data saturation, which refers to the point at where additional data collection no longer provides new insights. To identify saturation, data collection and preliminary data analysis should be conducted concurrently (Patton 2015, p. 300). Consequently, saturation was considered achieved with a total of nine participants. The selected interviewees represented different roles and responsibilities within the supply process, and their years of experience in the current role were also considered to ensure sufficient knowledge of the category and its practices.

With the nine selected participants, recurring themes and patterns began to appear from the data across the interviews. In addition, and as indicated in the table 5, the data collection was structured to first gather insights from the operational level, followed by strategic level, quality-related perspectives and finally category management. This approach supports the comprehensive understanding of both day-to-day operational activities as well as higher-level decision-making processes.

Inter- viewee Code:	Role in the Category:	Years of Experi- ence in the Cur- rent Position:	Main Responsibilities Within the Category:
OP1	Operational Purchaser	Three years	Ensuring the material availability for the production.
OP2	Operational Purchaser	Three years	Ensuring the material availability for the production.
OP3	Operational Purchaser	Three years	Ensuring the material availability for the production.
SP1	Strategic Purchaser	Three years	Supplier selection, supplier relationship management, pricing and commercial negotiations. Long-term forecasting and monitoring material requirements.
SP2	Strategic Purchaser Trainee	One year	Requesting quotations, creating agreements and assisting with pricing and other commercial activities.
SP3	Senior Strategic Purchaser	Twenty years	Supplier selection, supplier relationship management, pricing and commercial negotiations. Long-term forecasting and monitoring material requirements.
SP4	Strategic Purchaser	Four years	Supplier selection, supplier relationship management, pricing and commercial negotiations. Long-term forecasting and monitoring material requirements on.

SDE1	Supplier Development Engineer	Ten years	Developing supplier performance, monitoring and improving quality and collaboration with suppliers.
CM1	Category Manager	Six years	Accountable for ensuring the suppliers operate in compliance with required standards.

**Table 5.** Interview respondents.

Given this background information in advance and before the actual findings, each interviewee was also asked about the frequency of their interaction with international suppliers. All participants stated to communicate with international suppliers on a regular basis. Operational Purchasers were typically in contact on daily basis, Strategic Purchasers on a weekly basis, while the Supplier Development Engineer and Category Manager communicated with suppliers more monthly. This question was included to establish the respondents' level of international supplier engagement and to support the credibility of their insights on the subject.

Although a semi-structured interview guide was developed in advance for participants across different roles ensuring that the main research questions were consistently addressed, the interview process remained flexible and iterative. While the core topics were maintained to ensure alignment with the research objectives, additional questions were developed based on the insights gained from earlier interviews. For instance, perspectives expressed by operational purchasers were subsequently introduced in interviews with strategic purchasers, allowing the researcher to explore similarities, differences and potential contradictions in viewpoints. This approach enabled a deeper and comprehensive understanding of the topic across organizational levels.

The interviews were conducted via Microsoft Teams due to geographical dispersion. All interviews were recorded and transcribed to ensure accuracy. Additionally, notes were taken during the interviews to capture key observations. Each interview's transcript was stored as separate processed files, maintaining confidentiality and anonymity ensuring that only the researcher could identify each interviewee. A semi-structured interview guide was used to ensure consistency across interviews while still allowing flexibility. As the data collection process insights from previous interviews were used to refine and develop follow-up questions. This iterative approach enabled a deeper understanding of the topic. Lastly, depending on the interview, one or two participants were involved allowing the study to capture both individual perspectives and broader departmental perspectives.

### **3.5 Data analysis**

The purpose of qualitative data analysis is to develop a meaningful and coherent understanding of the data enabling the generation of rich interpretations of the phenomenon under investigation (Puusa et al., 2020). In this study, the analysis follows an abductive approach, allowing movement between empirical data and existing theory. The process began with familiarization with the interview data after which the data was coded and organized into themes. The themes primarily emerged from the data, but theoretical concepts were used to support and deepen the interpretation. The analysis was conducted manually by identifying and categorising relevant data into meaningful themes.

The chosen approach allowed for a systematic as well as flexible analysis supporting a deeper understanding of the topic under investigation. In addition, in line with the interpretivist research philosophy, the analysis aimed to preserve participants' perspectives and provide an in-depth understanding of their experiences (Saunders 2023, p. 655). Therefore, participants' quotations are included in the findings to support the interpretation.

### 3.6 Trustworthiness of the study

In case study research these criteria commonly include trustworthiness, credibility, confirmability and data dependability (Yin 2009, p. 40-41). Additionally, as the research design is intended to represent a logical set of statements, it is essential to evaluate its quality using established criteria. According to Hirsjärvi et al., (2000, p. 185), the concepts of reliability and validity assume that the researcher aims to approach an objective reality and its truth. Moreover, Patton (2015, p. 652) states that the creditability of qualitative study is built on four connected factors which are thorough and high-quality data collection, the credible and systematic analysis of the data, the researcher's competence in terms of experience and the extent to which readers consider the research valuable and convincing.

Throughout the study both reliability and validity of the research have been considered to ensure the quality of the research design. In this study, high quality data collection is supported through several intentional choices. The researcher topic was narrowed down, and the selected category was chosen to ensure the topic remained clear and relevant. Credible and systematic analysis was addressed through thematic analysis and collected data was being analysed promptly after each interview to enhance the researcher's understanding of the phenomenon throughout the data collection process. The researcher's competence and practical understanding of the topic are further supported by their work experience within the selected category. The value of the research for readers is reflected in its practical relevance to multinational companies and organizational development.

Construct validity refers to the identification of appropriate operational measures for the concepts being studied (Yin 2009, p. 40-41). Construct validity is enhanced by collecting data from multiple stakeholders representing different roles, allowing the study to capture different perspectives and reducing the risk of biased interpretations. Internal validity concerns the establishment of casual relationships where certain conditions are

shown to lead to specific outcomes (Yin 2009, p. 40-41). Additionally, it refers to the extent to which a research instrument accurately measures the concept it is intended to measure ensuring that the findings and conclusions are credible and alternative explanations are minimised (Saunders 2023, p. 520). In this study internal validity is supported through the identification of patterns and relationships in the data, particularly regarding the causes and consequences of delivery delays.

External validity refers to the extent which the findings can be generalized beyond the case study (Yin 2009, p. 40-41), to other relevant real-world contexts (Saunders 2023, p. 520). External validity is addressed through analytical generalization. Although the study focuses on a single organizational unit, the findings are linked to existing theory and can therefore be applied to similar contexts. Reliability however refers to the consistency and repeatability of the research process (Yin 2009, p. 40-41), and it is ensured by clearly documenting the research process including data collection and analysis procedures. This enables the study to be replicated in similar settings.

Lastly, this study followed the ethical guidelines of the University of Vaasa's responsible thesis writing process (University of Vaasa, 2025 n.d.). Participants were informed about the purpose of the study and the voluntary nature of participants. Confidentiality and anonymity were ensured allowing participants to share their views openly. The use of recordings, transcripts and notes further supports the accuracy and trustworthiness of the data collected.

## 4 Research Findings

This chapter presents the empirical findings of the study. The findings are based on nine semi-structured interviews conducted with stakeholders within the selected category, including representatives from operational purchasing, strategic purchasing, supplier development and category management. Rather than presenting the findings by respondent group, the chapter synthesizes the perspectives of different roles around the key themes relevant to the research objectives. The findings are organized accordingly to the two research questions and therefore are divided into two main sections. The first section examines how delivery delays from international suppliers are managed within the category. The second section focuses on the operational and cost implications created by delivery delays. Table 6 provides a summary of the main themes and key findings identified throughout the interviews related to delivery delays in international supplier relationships.

Section 1: Management of Delivery Delays from International Suppliers	Key Findings:
Causes of Delivery Delays	Delivery delays emerge from both supplier-side, capacity constraints and internal planning instability
Communication and Information Visibility	Delays are often identified reactively due to limited transparency and fragmented information sharing
Reactive Delay Management Practices	Delay management is mainly reactive and based on operational prioritization
Proactive Delay Management practices	Quality and delivery reliability are prioritized over price
Supplier Relationship and Collaboration	Buyer-supplier quality improves transparency, responsiveness and supply continuity

Section 2: Operational and Cost Implications of Delivery Delays	Key Findings:
Operational Implications of Delivery Delays	Delivery delays disrupt production continuity, increase workload and weaken planning stability
Cost Implications of Delivery Delays	Delivery delays create both direct logistical costs and hidden operational costs
Supplier Performance Implications	Supplier performance is evaluated primarily through quality, delivery reliability, responsiveness and long-term operational continuity

**Table 6.** The main findings of the study.

#### 4.1 Management of delivery delays from international suppliers

The first section examines the management of delivery delays from international suppliers. The findings indicate that delivery delay management consist of reactive and proactive practices involving communication, supplier coordination, operational monitoring and collaborative problem-solving. The first section addresses the first research question:

1. How do organizations manage delivery delays from international suppliers?

Previous literature has recognized disruptions in global supply chains along with their ripple effects as a major risk to the organizational levels (Herold et al., 2023, p. 2213). The interview findings support this perspective, indicating that delivery delays are a frequent and recurring challenge in international supplier relationships. However, the interpretation of delivery delays varied depending on the respondent's role and level of responsibility within the organization. While some respondents mainly described delivery delays as day-to-day disruptions requiring immediate corrective actions, others

viewed delays more broadly as structural performance issues affecting supplier reliability, sourcing decisions and long-term business continuity.

The findings further indicated that delivery delays are not perceived as isolated incidents but rather as an embedded operational phenomenon affecting daily purchasing activities, production planning and supplier management. Several interviewees described delays as a recurring part of everyday operations, often requiring continuous coordination efforts, operational prioritization and close supplier communication.

*Delivery delays are visible particular through disruptions in daily operations and create continuous coordination efforts, uncertainty and additional workload for all parties.*

Several respondents also reported that delays occur on weekly basis, suggesting that delivery-related disruptions have become a relatively normalized aspect of operational activities within the case category. Therefore, understanding how delivery delays are perceived across organizational roles provides an important basis for examining the management practices used to address them.

Although the research focus on international suppliers, interestingly, several respondents indicated that delivery delays were not perceived to differ significantly between domestic and international suppliers. Delays were considered to occur relatively regularly across both supplier groups, and often for similar reasons. However, international suppliers were still perceived as more critical in urgent situations due to longer transportation lead times and occasional logistical complexity. In addition, certain strategically important suppliers were recognized for maintaining exceptionally high delivery reliability with delivery performance remaining consistently close to one hundred percent over several years.

These findings suggest that supplier-specific capabilities and reliability may be more important than the domestic or international status of the supplier itself.

#### **4.1.1 Causes of delivery delays**

As this thesis explores the management of delivery delays from international suppliers, understanding the underlying causes of the delays was considered essential. Across all interview groups, supplier capacity challenges were identified as the most common direct cause of delivery delays. Respondents repeatedly referred to situations in which suppliers lacked sufficient labour, machine capacity, production flexibility or other operational resources to meet agreed delivery schedules, particularly during periods of increasing demand.

However, capacity limitations were not viewed solely as supplier failures. Instead, the findings further reveal that supplier capacity problems are strongly connected to unstable planning, changing schedules and continuous modifications initiated by the case company. In several case examples, suppliers were perceived to operate near maximum utilization, reducing their ability to absorb urgent orders, schedule changes and unexpected disruptions. The findings further suggest that delivery delays were not caused by a single factor but rather emerged from multiple interrelated internal and external sources.

*The growing and fluctuating order volumes in recent years have further intensified capacity-related challenges across the supplier base, limiting suppliers' ability to respond flexibly to sudden schedule changes and increasing the risk of delayed deliveries.*

A second major cause of delivery delays related to internal planning instability within the case company. Interviewees across multiple groups explained that frequent rescheduling, changing order priorities and late purchasing requests weakened suppliers' ability to plan production efficiently. Respondents noted that suppliers were occasionally

expected to deliver under lead times that were operationally unrealistic. As a result, delays were usually rooted not in supplier unwillingness but in misaligned planning assumptions and compressed timelines created internally.

Design modifications during the order fulfilment process also emerged as a recurring source of delays. Several respondents reported that technical drawings, dimensions, material specifications or quality requirements may occasionally be updated after the supplier has already begun to machine the components. One interviewee described how continuous modifications directly affect suppliers' operations and production processes.

*Frequent changes in drawings and technical specifications interrupt suppliers' production processes and reduce their availability to maintain stable schedules. Material drawings and technical requirements are continuously updated, requiring suppliers to rapidly adapt their manufacturing processes.*

Another respondent supported the statement and continued that suppliers may have already started machining components before receiving the updated specifications, forcing suppliers to interrupt and reorganize the production process.

*In worst-case scenario, suppliers are forced to interrupt machining, revise tooling, restart production or scrap partially completed items. This increases lead times and reduced schedule reliability.*

This evidence underscores the extent to which suppliers are expected to remain highly responsive and continuously adjust their production schedules, operational priorities and manufacturing routines in accordance with the changing requirements of the case company. Interviewees further reinforced this interpretation by stating that supplier often operate under uncertain production conditions while simultaneously attempting to accommodate continuously changing customer requirements. Weekly plan modifications, accelerated schedules and uncertain bill of material requirements were identified

as factors that weaken supplier's ability to perform consistently. Consequently, delivery reliability cannot be evaluated solely as a supplier-related performance outcome, as internal planning instability and change management practices also shape suppliers' ability to meet agreed delivery schedules.

The findings further concern overly optimistic delivery promises. Two interviewees noted that suppliers may confirm delivery dates that are not realistically achievable, particularly when they are already operating close to full capacity.

*Many of the suppliers are very optimistic in their delivery promises which creates unrealistic expectations and increases planning uncertainty. Suppliers often believe they can deliver the materials on time, only to communicate delays after it was already too late to react. This lack of timely transparency increases uncertainty.*

This suggests the existence of information asymmetry within supplier relationships. Suppliers possess more accurate real-time information regarding their operational capability, workload and production constraints than the case company. However, this information is not always communicated transparently or proactively. As a result, the case company may base sourcing decisions on delivery promises that later prove unrealistic.

Quality-related challenges were identified as an indirect but important cause of delivery delays. Poor quality performance appeared closely linked with delivery reliability rather than representing a separate performance dimension.

*Claimed components create a compounding effect in which limited capacity, urgent schedules and process pressure increase the likelihood of additional defects. Defective components, machining failures, rework requirements and rejected batches consume supplier capacity and may delay subsequent deliveries.*

Supporting this, one of the respondents emphasized the strong connection between supplier capacity and quality performance by explaining that capacity pressure in supplier's side may create the "snowball" effect, where urgent schedules increase production pressure, resulting in quality defects, rework and ultimately further delivery delays.

*If the supplier is required to produce one-hundred units but only ninety-five meet the quality standards, additional units must be manufactured to compensate for defects, and this creates a compounding effect.*

Therefore, quality problems and delivery delays were not viewed as separate operational issues but as interconnected outcomes influenced by the same underlying constraints. Capacity pressure may increase the quality defects, while quality defects reduce available capacity and delay future deliveries.

Lastly, a notable finding from one of the interviewees was seasonal and structural disruptions that were also identified as recurring causes of delays. Summer closures, holiday periods and shutdowns among both suppliers and sub-suppliers' side were recognised as annual sources of late deliveries. The interviewee observed that these disruptions were often predictable yet not always sufficiently anticipated by either the supplier or the case company. Particularly in global sourcing contexts, longer supply chains and multiple dependency layers increased exposure to such interruptions.

Overall, the findings suggest that delivery delays should be understood as a shared supply chain phenomenon emerging from the interaction between supplier constraints, internal planning instability, continuously changing technical requirements and quality-related disruptions. Consequently, improving delivery reliability requires not only stronger supplier performance but also more stable internal planning processes and greater visibility across the supply chain.

#### 4.1.2 Communication and information visibility

Communication and information visibility were highlighted across all interviews as critical elements influencing delivery reliability and delay management. The findings from the interviews reveal that transparency, information sharing and proactive communication strongly influence on delay management.

Supporting the earlier theoretical discussion, an effective collaboration between organization and their suppliers is essential for achieving operational efficiency and maintaining product performance. Although collaboration was perceived effective, interestingly communication-related issues were highlighted as a key reason why delays become difficult to anticipate and manage. Interviewees emphasised that communication is the most important activity in daily operations and in practice, communication occurs primarily through e-mail, Microsoft Teams and phone calls. Among these communication channels, phone calls were considered particularly important during the urgent situation enabling immediate responses and faster decision-making.

One respondent group working daily with international suppliers emphasized that an effective mitigation of disruptions requires coordination between multiple internal and external stakeholders.

*Communication with suppliers, communication with the transportation providers and communication with production experts are the three most important actions when managing delivery delays in practice.*

This demonstrates that delay management is highly interdependent. Once a disruption occurs, communication with suppliers, transportation providers and production experts to assess urgency, revise schedules and arrange possible corrective actions is vital.

Despite the importance of communication, the findings consistently indicate that information sharing remains reactive rather than proactive. Suppliers rarely provide early

warnings regarding upcoming disruptions. Instead, delays are often discovered only when shipment has not been dispatched as expected, order confirmations have changed or internal systems reveal overdue orders.

*In many cases the notification occurs only at the point when delivery is expected to be dispatched or when it becomes evident that the shipment has not been booked.*

The delayed communication reduces the organization's ability to implement mitigation actions early. It also increases uncertainty and coordination workload within procurement operations. Interviewees also highlighted that machine breakdowns, workforce shortages and capacity constraints remain usually undisclosed until delays become operationally visible.

*Suppliers often believe that they can deliver the materials on time, only to communicate delays after that it was already too late to react.*

This gives evidence that suppliers may hesitate to communicate negative information due to concerns regarding customer relationships, performance evaluations or contractual consequences. However, the findings also indicate that communication problems are not always caused by deliberate withholding of information. Suppliers may genuinely believe that they can recover the situation before the delay becomes visible. However, from the organization's perspective, late communication limits the possibility to inform production and source materials from alternative suppliers. This supports that challenges related to transparency, information sharing and proactive communication strongly influence delay management and therefore also to delivery reliability.

Another significant finding concerns limited visibility into suppliers' actual operational conditions. Procurement professionals acknowledged that although historical delivery

performance is being monitored, the company lacks comprehensive understanding of suppliers' real production capacity, current workload and competing customer priorities.

*Without visibility into supplier capacity, it becomes difficult to forecast feasible order volumes, assess expansion readiness, identify bottleneck risks and evaluate realistic supplier commitments.*

This lack of visibility complicates sourcing decisions and increases uncertainty regarding future delivery capability. It also indicates that the organization may continue placing orders with suppliers despite limited knowledge of whether suppliers can realistically absorb additional demand. Consequently, interviewees were not only concerned with current delivery performance but increasingly with evaluating whether suppliers possess sufficient long-term capacity and flexibility to support future demand growth.

Interestingly, the findings also reveal that risk-taking may occur on both sides of the buyer-supplier relationship. Suppliers rarely reject orders even when operating close to maximum capacity, while the organization may continue placing orders despite the awareness of supplier limitations. Consequently, both parties may participate in risk-taking behaviour that weakens delivery reliability.

Several interviewees also noted that supplier capacity constraints may become visible already during the quotation process. Some suppliers were described as responding slowly to requests for quotations, occasionally requiring several weeks to provide the information.

*Delayed responsiveness is often associated with limited supplier resources and increasing workload pressures.*

The respondents continued highlighting that in urgent sourcing situations, responsiveness itself became an important supplier selection criterion. When materials are needed

quickly, procurement tended to prioritize suppliers capable of responding rapidly and offering shorter delivery lead times. This suggests that supplier responsiveness functions not only as communication-related capability but also as an operational indicator of supplier flexibility and available capacity.

Lastly, one respondent highlighted the existence of internal coordination challenges within the category, particularly at the procurement level. Information related to sourcing activities, supplier contracts and procurement progress was occasionally fragmented across different individuals without centralized visibility. As a result, the organization's members were not always aware of which suppliers they were currently contacting or how sourcing activities were progressing.

Communication practices across the supplier base were also not perceived as fully systematic. Supplier meetings were conducted inconsistently due to divided responsibilities among especially strategic purchasers. In addition, suppliers were described as communicating capacity-related concerns more openly during monthly meetings than during daily operational communication. As a result, important information may not always be effectively transferred across all organizational levels and among different stakeholders.

*Important information may remain insufficiently shared within the organization, limiting broader operational visibility and coordination.*

These findings indicate that communication challenges exist not only between suppliers and the organization but also internally within procurement operations. Fragmented internal coordination and inconsistent information sharing may weaken proactive delay management, reduce operational visibility and limit the organization's ability to respond to delivery risks before they develop into operational disruption.

### 4.1.3 Reactive delay management practices

The findings indicate that the management of delivery delays is primarily reactive in nature. Although several practices are used to improve delivery reliability and reduce disruptions, daily procurement activities remain dominated by short-term problem solving and urgent operational coordination. Interviewees emphasized that the urgency and criticality of the missing material. Delays involving production-critical components receive more attention than non-urgent deliveries, and organizational resources are allocated accordingly.

*Delays associated with urgent and critical materials missing from the production receive significantly more attention whereas non-urgent delays are often tolerated and may pass with limited intervention.*

This suggests that delivery delay management follows a prioritization logic in which procurement, production and supplier coordination activities are adjusted based on operational urgency. Respondents working closely with production-critical materials explained that production functions first communicate material urgency, after which they coordinate possible acceleration actions with suppliers, transportation providers and internal stakeholders. In situations where delayed material threatens production continuity, operational purchasers actively coordinate revised schedules, expedited deliveries and alternative sourcing arrangements to secure material availability as quickly as possible. Consequently, maintaining production flow often becomes more important than short-term cost efficiency during severe delivery disruptions.

*In case of delayed deliveries, the primary objective is to secure the required materials as quickly as possible even if this requires sourcing from alternative suppliers at higher cost.*

One important operational practice identified concerns the use of critical materials list. The list highlights missing components that threaten ongoing production activities and

require immediate attention. The list increase visibility regarding operational priorities and support decision-making during disruptions. Despite these on-going practices, the findings indicate that delay management processes remained largely situation-dependent rather than fully standardized. Instead, procurement professionals rely heavily on experience, prioritization and situational judgement.

The findings further suggest that international supplier delays were perceived as particularly critical due to longer transportation time and logistical complexity. In addition, respondents highlighted that many current mitigation practices focus on short-term corrective actions such as weekly monitoring, revised delivery schedules and follow-up communication. While these actions support operational continuity, several interviewees acknowledged that they do not necessarily address the underlying structural causes of recurring delivery delays.

*Delayed deliveries should be analysed in detail after a defined period. Suppliers should document the reasons for these delays and propose corrective actions.*

Overall, the findings indicate that reactive mitigation practices primarily focus on minimizing immediate operational disruptions and maintaining production continuity in situations where delivery reliability has already been compromised.

#### **4.1.4 Proactive delay management practices**

In addition to reactive practices, the findings also identified several proactive approaches aimed at improving delivery reliability and reducing the likelihood of future disruptions. These practices focus on forecasting, supplier collaboration, sourcing flexibility and long-term capacity planning. The findings suggest that procurement functions continuously attempt to improve supply chain visibility and strengthen suppliers' ability to respond to changing operational conditions before delivery disruptions occur.

Forecasting emerged as a central proactive mitigation practice. Forecasts are regularly prepared and communicated to suppliers to provide visibility regarding expected future demand and volume development.

*Forecast information is shared both on a short-term operational level and on a longer-term strategic level, allowing suppliers to anticipate upcoming production requirements and capacity needs.*

The interviewees further explained that future demand expectations, expected growth and possible capacity-related concerns are also discussed collaboratively during monthly meetings and annual business reviews with suppliers. These practices aim to improve transparency and mutual visibility between the case company and suppliers. Suppliers are expected to communicate potential deviations, capacity constraints or other risks affecting future deliveries.

*If suppliers respond to the forecasts with “no deviation”, the information is generally interpreted as confirmation that current demand expectations can be fulfilled without significant delivery-related concerns.*

However, the findings also reveal that forecasting remains highly challenging in dynamic operational environments characterised by fluctuating order volumes, changing schedules and continuously evolving customer requirements.

*Procurement functions attempt to improve forecasting accuracy and plan sourcing activities proactively, yet changing schedules, fluctuating order volumes and urgent customer requirements continuously undermine planning stability and increase the need for reactive coordination.*

Several interviewees emphasized that even a small percentage changes in demand may create substantial volume differences within the case category, complicating accurate

capacity planning and uncertainty throughout the supply chain. One interviewee explained that forecasting challenges vary significantly across procurement categories.

*In categories characterized by lower and more stable volumes, future demand may be estimated relatively accurately based on historical consumption and percentage-based growth assumptions.*

In contrast, within the case category, annual demand may consist of several thousand items per material. Under such conditions, even small percentage changes may translate into substantial volume differences, complicating the accurate allocation of demand across production periods and consumption dates.

This finding supports the decision to focus the study on a single purchasing category, as it enables a more detailed and context-specific analysis of the phenomenon under investigation.

Dual sourcing additionally emerged as an important proactive mitigation strategy. Respondents with sourcing responsibilities explained that some materials are sourced simultaneously from lower-cost suppliers with longer transportation lead times and from faster, more expensive suppliers. The supplier selection between these alternatives depends on operational urgency, delivery risk and material criticality. Maintaining alternative suppliers was considered particularly important not only for managing supplier-specific delivery delays but also for improving broader supply chain resilience during external disruptions.

*Unexpected external activities, logistical disruptions or supplier-related issues may suddenly prevent a supplier from delivering the required components on time. In such situations, the existence of alternative suppliers enables the organization to shift purchasing volumes more rapidly and maintain supply continuity.*

However, sourcing flexibility remained limited for single-sourced materials. In single sourcing situations, procurement had few alternatives when suppliers experience delivery disruptions. One respondent interestingly highlighted the importance of dual sourcing, stating that dual sourcing should be applied to all components whenever operationally feasible. This finding emphasize that dual sourcing is perceived not merely as a cost or delivery management practice but increasingly as broader supply chain resilience strategy.

The respondents' observations further suggest that proactive delivery management increasingly involves evaluating suppliers' long-term scalability and growth capability rather than focusing solely on current delivery performance. One interviewee emphasized that rapidly increasing order volumes require systematic assessment of suppliers' future production capability together with the capacity and flexibility of their broader supply networks.

*Suppliers' ability to increase production capacity at the same pace as demand growth should be assessed proactively together with the capability of their own sub-suppliers and broader supply network.*

In addition to forecasting and dual sourcing, several other proactive mitigation practices were identified. Placing orders earlier, increasing safety stocks, strengthening supplier communication and improving launch planning and monitoring suppliers more closely were recognised proactive mitigation practices within the category. However, the respondents consistently emphasized that unpredictable operational conditions limit the effectiveness of proactive planning.

One interviewee further explained that the case company may already be reacting too late once declining delivery reliability becomes operationally visible. According to the respondent, rapidly increasing order volumes require not only internal planning

adjustments but also systematic evaluation of suppliers' long-term growth capability and scalability.

Overall, the findings suggest that proactive delay management aims to improve long-term delivery reliability, supply chain visibility and operational resilience. However, continuously changing operational conditions and growing supply chain complexity simultaneously increase the need for reactive coordination and short-term problem solving. Additionally, this suggests that delivery reliability problems should not be viewed as short-term operational disruptions but also as indicators of insufficient long-term capacity planning and supplier development within growing supply chains.

#### **4.1.5 Supplier relationships and collaboration**

The findings indicate that supplier relationships and collaboration play central role in the management of delivery delays and the maintenance of supply continuity. Across all the respondent groups, strong buyer-supplier relationships were perceived as essential for improving communication, problem solving and delivery reliability. Interviewees consistently emphasized that successful supplier-buyer relationships are based on trust, openness, transparency, responsiveness and collaborative communication practices.

The findings indicate that that relationship quality directly influences transparency and the willingness of suppliers to communicate operational risks proactively. The interviewees explained that suppliers are expected to communicate operational risks honestly and proactively. Timely communication regarding capacity shortages, delays or technical problems was viewed as an indicator of healthy and well-functioning supplier relationships.

*Suppliers are expected to demonstrate commitment through responsiveness, transparency and honest communication.*

Several interviewees additionally emphasized the importance of creating a safe communication climate in which suppliers feel comfortable discussing operational difficulties openly. Punitive reactions toward every delivery delay were considered potentially counterproductive as they may reduce suppliers' willingness to communicate problems proactively. Instead, calm and respectful communication with suppliers was perceived to improve long-term cooperation and increase the likelihood that suppliers communicate potential problems earlier. Consequently, relationship management was not viewed only as a strategic sourcing activity but also as an operational mechanism supporting delivery reliability and effective delay management.

The findings additionally revealed that long-term supplier relationships generate operational learning benefits. According to one interviewee, suppliers operating in technically demanding categories require significant time to understand the company's products, technical requirements and operational practices.

*Relationship-specific investments such as process learning, technical understanding and communication routines generate efficiency gains over time.*

Therefore, long-term buyer-supplier relationships were viewed to improve coordination, efficiency, operational understanding and collaboration quality. At the same time, the findings also revealed potential dependency risks associated with long-term suppliers, particularly in single-sourcing situations.

*Suppliers possessing unique technical capabilities may gradually gain stronger bargaining power when alternative suppliers are limited.*

This was seen as strategic balancing challenge between relationship stability and maintaining sufficient supplier competition.

Another recurring finding concerned supplier prioritization during periods of constrained capacity. Interviewees explained that suppliers operating near maximum utilization may prioritize customers strategically depending on business importance, relationship quality and long-term cooperation potential. One important question raised among the interviewees:

*How important is our company for the suppliers?*

The findings suggest that relationship quality may significantly influence supplier prioritization decisions during capacity shortages and urgent delivery situations. Strong buyer-supplier relationships may improve not only communication but also the likelihood that the supplier prioritizes the case company when capacity is limited. Several interviewees additionally emphasized that suppliers should actively participate in problem solving and product development activities. Capable suppliers were expected to challenge technical specifications when alternative solutions could improve manufacturability, quality or cost efficiency.

This highlighted that the case organizations increasingly recognize the importance of collaboration-oriented supplier management. Although delays, quality issues and additional costs remain common operational challenges, respondents generally perceived collaborative long-term relationships as more beneficial than purely transactional supplier management approaches. This indicates that suppliers are increasingly viewed not merely as material providers but as collaborative development partners contributing to operational improvement.

Overall, the findings suggest that relationship quality functions as an important operational capability influencing transparency, communication quality, supplier responsiveness, flexibility and long-term delivery performance. Although delivery delays, quality issues and additional costs remain recurring operational challenges, collaborative and

long-term supplier relationships were generally perceived as more beneficial than purely transactional supplier management approaches.

## **4.2 Operational and cost implications of delivery delays**

This section addresses the second research question:

2. What operational and cost implications do the delivery delays create?

The findings indicate that delivery delays generate both direct and indirect operational and financial consequences across procurement and production operations. Delivery disruptions were not perceived merely as scheduling challenges but broader operational events affecting production continuity, planning stability, coordination activities, supplier evaluation and overall supply chain performance. While the previous section focused on the management of delivery delays, this section examines the operational and cost implications created by such disruptions within international suppliers.

### **4.2.1 Operational implications of delivery delays**

The findings indicate that delivery delays create significant operational consequences throughout the procurement and production operations. Across all respondent groups, production continuity was perceived as the most critical operational priority and even a single delayed component was described as capable of disrupting broader operational activities. Interviewees emphasized that missing materials may interrupt production schedules, trust, test runs, installation activities and final customer deliveries.

*Installation teams, production personnel and other employees may spend significant time waiting for missing materials, coordinating delays and arranging corrective actions.*

Although severe production interruptions were described as relatively uncommon, respondents viewed them as the most serious operational consequence associated with delayed deliveries. This indicates that suppliers' delivery reliability is considered even more critical than costs, as delays can have significant negative impact on production schedules and overall supply chain performance. Thus, the interview findings strongly support the earlier theoretical discussion emphasizing that the operational impact of delayed deliveries often exceeds the direct financial cost differences between suppliers. Several interviewees also explained that delays create substantial operational uncertainty and require continuous coordination between purchasers, procurement, suppliers, transportation providers and production functions. As a result, purchasers and procurement professionals spend significant time monitoring delays, revising schedules, coordinating recovery actions and communicating updated delivery information internally.

The findings further reveal that delivery delays increase operational workload across multiple organizational functions. In addition to supplier coordination, delays were associated with emergency sourcing activities, production disturbance management, additional planning work and claim handling processes. Consequently, delivery disruptions were not perceived as isolated logistical issues but as operational events generating inefficiencies and coordination burdens.

*Delivery disruptions often result in increased operational costs for example, from transportation, inventory buffering and production interruptions. Delays also generate indirect costs through additional planning activities, recovery actions and supplier management efforts.*

The findings additionally indicate that operational consequences frequently extend beyond immediate production activities. Several respondent groups observed that delays create planning instability and complicate forecasting, scheduling and resource allocation activities throughout the supply chain. In dynamic operational environments

characterised by changing schedules and fluctuating demand, the stakeholders in the category are often required to continuously reprioritize materials and adjust operational plans.

Interestingly, the respondents also emphasised that delivery reliability was often considered more critical than purchasing price in urgent operational situations. Missing or delayed components may directly interrupt production activities whereas more expensive materials can still be utilized operationally if they are physically available.

*We can't use a component that is delayed and it is not physically available for the production, and we can't use defective components. However, we can still use expensive components.*

This illustrates that delivery delays were primarily evaluated through their operational impact on production continuity rather than solely through direct financial consequences. Overall, it can be stated that delivery delays create substantial operational uncertainty, increase coordination workload and weaken planning stability across procurement and production operations.

#### **4.2.2 Cost implications of delivery delays**

The findings reveal that delivery delays generate both direct and indirect costs throughout the procurement and production operations. While some costs are clearly visible and measurable, many operational consequences remain partially hidden or difficult to quantify. Consequently, interviewees emphasized that the financial impact of delivery disruptions extends considerably beyond isolated transportation expenses.

One of the most immediate and visible cost impacts identified across the interviews concerned the use of express deliveries. When production-critical materials are delayed, expedited transportation methods are often required to avoid interruptions in production flow.

*Express deliveries increase logistics expenses compared to standard transportation methods. However, the express deliveries are often accepted if materials are already missing from the production.*

However, interviewees explained that decisions regarding express deliveries are evaluated case by case depending on the operational criticality of the delayed material. Although transportation costs are considered carefully, maintaining production continuity was perceived as more important when the operational consequences of waiting exceeded the additional logistics expenses.

*If the estimated costs of express deliveries become exceptionally high, production may occasionally decide to accept the delay and wait for the materials to arrive through standard transportation instead.*

This indicates that that decisions regarding express deliveries are evaluated case by case based on the operational criticality of the delayed material. While transportation costs are considered carefully, procurement and production functions may prioritize supply continuity when the potential operational consequences of waiting are greater than the additional logistics expenses. Consequently, arranging express deliveries frequently reflects a total-cost logic in which maintaining operational continuity outweighs isolated transportation expenses.

This suggest that procurement decision-making during delivery disruptions follows a broader total-cost logic in which operational continuity outweighs isolated transportation costs. In highly urgent situations, traditional purchasing price considerations may therefore become secondary compared to securing material availability.

*When production continuity is threatened and only one supplier can deliver the component, the case company may accept substantially higher prices with additional costs to avoid larger operational costs.*

The respondents additionally observed several hidden and indirect costs associated with delayed deliveries. These hidden costs included additional administrative workload, supplier coordination activities, emergency sourcing, recovery actions, production disturbance management and installation waiting time. All respondent groups stated that such costs are difficult to measure systematically due that they are dispersed across multiple organizational activities and functions.

Although hidden and indirect costs were observed, the findings reveal that the organization lacks precise visibility regarding the total financial impact of delivery delays. Although transportation expenses, procurement costs and supplier prices are actively monitored, broader disruption-related costs are not consistently tracked through systematic databases or reporting systems. Interviewees additionally highlighted that assigning responsibility for delay-related costs is often complex because delays typically emerge from interconnected actions and decisions across multiple stages of the supply chain.

Transportation expenses, recovery costs and broader operational disruption costs were not consistently tracked through systematic databases. The reason for this was the difficulty of distinguishing between direct and indirect costs, following the important question of the complexity of assigning responsibility for delay-related costs.

As discussed earlier in relation to the cause of delivery delays, respondents across all interview groups emphasized that delays and their associated costs are not always solely supplier-generated and therefore determining responsibility for additional costs is complex, as delays often resulted from interconnected actions and decisions across multiple stages of the supply chain.

*Determining responsibility for additional costs is complex, as delays often result from interconnected actions and decisions across multiple stages of the supply chain.*

Interestingly, some of the interviewees questioned the practical value of systematically calculating all delay-related costs. While cost awareness was considered important, several respondents emphasized that procurement activities prioritize operational responsiveness and supply continuity over extensive cost tracking of individual disruption events. Although transportation expenses, supplier prices and procurement costs were generally monitored in sourcing decisions, the interviewees suggested that systematically calculating every operational consequence of delayed deliveries may not necessarily provide sufficient managerial value in practice.

This finding indicates that maintaining long-term supplier relationships is often prioritized over aggressive cost recovery practises. Although procurement agreements may define compensation mechanisms for delayed deliveries, formal penalties and claims against suppliers were described as relatively uncommon.

*Aggressive actions and excessive penalties may damage communication and weaken future collaboration.*

Consequently, the company may occasionally accept certain additional costs to preserve long-term supplier relationships and maintain operational stability. Several respondents also agreed that supplier performance should be evaluated from a broader lifecycle perspective rather than focusing solely on purchasing price.

*A cheaper price may ultimately generate higher total cost if deliveries are delayed, parts are rejected or deviating components damage the engines.*

Overall, the findings show that delivery delays create broad financial consequences extending beyond direct transportation expenses and purchasing costs. The decision-making in the current organizational unit also reflects a pragmatic approach to procurement decision-making in which cost awareness remains important but operational continuity and day-to-day responsiveness are prioritized over extensive cost tracking of individual disruption events. Although procurement agreements may define compensation policies for delayed deliveries, maintaining strong supplier relationships are prioritized over cost recovery. Therefore, these results support the importance of evaluating supplier performance through a wider total cost perspective in which delivery reliability, operational continuity, quality performance and long-term relationship impacts are considered together.

#### **4.2.3 Supplier performance and operational**

Supplier performance evaluation emerged as an important mechanism for managing the operational and cost implications created by delivery delays. Interviewees explained that weak supplier delivery reliability increase operational inefficiencies and coordination efforts leading to additional indirect costs throughout the procurement process. Therefore, supplier performance was evaluated not only from a quality and price perspective, but also through its impact on operational continuity, responsiveness and long-term supply stability.

*Delivery delays have implications for supplier performance evaluation and sourcing decisions.*

The findings further indicate that recurring delivery delays influenced not only to the sourcing decisions but also to supplier monitoring practices and procurement risk assessment within the case category.

Across all interview groups, delivery reliability and quality performance were identified as the most important supplier evaluation criteria. Although purchasing price remained

relevant, interviewees consistently emphasized that operational performance failures ultimately generate substantially greater operational and financial consequences than isolated price differences. Several respondents summarized supplier priorities in the following order; quality, delivery reliability and price.

This suggest that supplier performance evaluation is strongly influenced by operational continuity considerations rather than purely cost-based decision-making. In this sense, supplier performance evaluation functioned as a tool for identifying and mitigating the broader operational and financial consequences created by delivery delays. However, supplier evaluation was not limited to measuring punctuality alone. While operational functions monitored delayed deliveries continuously in daily procurement activities, strategic functions focused more broadly on long-term supplier trends through monthly reviews, supplier meetings and performance follow-up processes. Consequently, a clear distinction emerged between short-term operational monitoring and long-term strategic supplier evaluation.

The findings further reveal that delivery reliability was not evaluated as an isolated performance indicator. Instead, the interviewees described strong interconnections between quality performance, supplier capacity and delivery reliability.

*Poor quality directly harms on-time delivery because defective components require re-work, replacement and additional claim handling. This increase coordination workload and generates further operational costs.*

This suggest that supplier performance dimensions are highly interconnected rather than independent operational measures. Suppliers experiencing capacity constraints may simultaneously create delivery instability and increased quality-related issues while weak quality performance may further reduce available production capacity and delay future deliveries. This illustrates how procurement decision-making during disruptions follows a broader operational continuity and total-cost perspective. While

higher purchasing prices may be tolerated temporarily, missing or poor-quality components may directly interrupt production activities and create larger operational and financial consequences.

Several interviewees additionally emphasized supplier responsiveness and communication quality as important dimensions of supplier performance. Suppliers were expected to demonstrate commitment through transparent communication, timely responses, realistic delivery confirmations and willingness to solve problems collaboratively. Consequently, supplier evaluation was not based only on statistical KPIs but also on the supplier's ability to support operational continuity during disruptions.

The findings from the interviews also reveal that supplier performance evaluation increasingly reflects a broader risk-based sourcing perspective. New suppliers were evaluated using structured assessment matrices, while established suppliers underwent recurring performance reviews together with stakeholders within the category members. Evaluation criteria included historical delivery performance, operational capability, supplier location, geopolitical risk, production capacity, logistics considerations and quality performance.

These findings suggest that procurement functions increasingly evaluate suppliers not only from a cost and quality perspective, but also through their ability to support long-term supply continuity and operational resilience. Interestingly, several interviewees noted that some suppliers may perform relatively weakly according to delivery reliability while demonstrating exceptional willingness to support urgent operational needs during disruptions.

One respondent further questioned whether supplier delivery reliability should always be interpreted solely through strict numerical delivery targets. According to the interviewee not all delayed deliveries necessarily create operational consequences and

isolated delivery reliability percentages may therefore fail to reflect the actual business impact of supplier performance.

This indicates that supplier performance evaluation should be interpreted within its broader operational context rather than through standalone delivery metrics alone. Consequently, supplier performance was increasingly assessed through a combination of responsiveness, flexibility, communication quality, service orientation and long-term collaboration capability.

The findings additionally reveal that supplier performance directly influences sourcing decisions and purchasing volumes. Recurring delivery delays or quality-related problems may lead procurement functions to reduce sourcing volumes or shift demand toward alternative suppliers. However, the practical impact of performance evaluation depended strongly on supplier market structure and sourcing availability. Particularly in single sourcing situations, procurement functions often had limited opportunities to replace underperforming suppliers.

*Despite performance challenges, the organization is often required to continue collaboration with existing supplier.*

This suggests that supplier evaluation and supplier replacement possibilities are strongly constrained by sourcing structure and supplier availability. Poor supplier performance does not automatically result in supplier replacement if qualified alternatives are limited or unavailable. In addition, one interviewee observed that recurring delivery and quality-related issues may gradually weaken long-term buyer-supplier relationships and reduce mutual trust between the parties.

However, the findings finally highlighted the importance of continuous improvement and supplier learning capability within supplier evaluation processes.

*Supplier evaluation should focus not only on counting delays or claims but also on understanding how suppliers improve over time.*

This perspective emphasizes the importance of corrective actions, root cause analysis, preventive actions and long-term supplier development rather than focusing solely on isolated operational failures. Overall, the findings suggest that supplier performance evaluation act as a vital indicator in managing the operational and cost implications of delivery delays. Rather than relying solely on individual delivery or price metrics, procurement functions evaluated suppliers through their ability to support operational continuity, responsiveness, flexibility and long-term supply resilience.

## 5 Discussion and Conclusions

This chapter uses the theoretical framework to interpret the empirical findings presented in the previous chapter. It provides conclusions of the study, summarize the key findings and discusses the results in relation to the research questions and existing literature findings. The primary purpose of this chapter is to explain how the findings answer the research questions and what they reveal about delivery delay management as well as its operational and cost implications in global supply chains. In addition, this chapter discusses the practical implications of the findings acknowledges the case study limitations and provide suggestions for future research.

### 5.1 Management of delivery delays in global sourcing

**RQ1.** How do organizations manage delivery delays from international suppliers?

Delivery delays are a frequent and recurring challenge in international supplier relationships, but the interview findings reveal that delivery delays are not perceived as isolated incidents but rather as an embedded operational phenomenon affecting daily purchasing activities, production planning and supplier management. Therefore, also delay management is recognised as a continuous coordination process rather than as isolated operational problem solving as well. While Wang et al., (2014, p. 501), identify supplier capacity limitations, production variability and quality differences as important sources of operational disruptions and delivery delays, the data highlights that the supplier capacity challenges are the most common direct cause of delivery delays. However, this doesn't mean that the disruptions are solely supplier's fault. Nevertheless, the results indicate that delivery delays cannot be explained solely by supplier-related failures.

According to Haverila et al., (2009, p. 247-248) supplier selection is typically based on multiple evaluation criteria, including the supplier's ability to meet quality requirements, provide timely and accurate information, adhere to delivery schedules and offer support in urgent situations. The findings further support this due that across all the respondents,

the most important supplier-related KPIs within the category are quality, delivery reliability and costs. However, the respondents highlighted that several operationally critical capabilities, such as supplier responsiveness, communication transparency and operational flexibility remain difficult to measure despite their importance. While communication-related capabilities are perceived as essential for maintaining operational continuity and responding effectively to delivery-related challenges, they are not equally visible within formal supplier evaluation practises. In practice, less quantifiable capabilities appeared equally important for maintaining supply continuity during urgent operational situations.

Existing literature has approached delivery reliability and delays primarily through supplier-related disruptions (Guiffrida et al., 2008, p. 2149). This extends previous research focusing primarily on supplier-related disruptions by demonstrating how internal planning instability, production schedule and forecasting changes within the case company also contribute significantly to delivery delays. Therefore, effective delivery delay management requires not only supplier control activities but also improved internal coordination and planning instability across the supply chain. This aligns with Grout (1999, p. 154) stating that achieving complete delivery reliability is challenging since one hundred percent on-time delivery can only be achieved under highly controlled conditions where delivery lead times fully accommodate process variability. Additionally, according to Platitas et al., (2025, p. 3) factors such as long lead times, transportation complexity and external uncertainties further complicate reliability. Especially in global environment, additional internal factors within the companies can pose challenges for suppliers in delivering products by the agreed delivery date. Consequently, improving delivery reliability requires not only supplier development and performance monitoring but also internal stability and planning accuracy.

According to Angkiriwang et al., (2014, p. 54-55) proactive resilience practices often co-exist with reactive practices. Although, reactive strategies focus on mitigating rather than reducing uncertainty by creating buffers that protect operational efficiency, reactive

management practices should not necessarily be understood as ineffective supply chain management. Instead, reactive coordination appears to emerge as structural consequence of operating in globally dispersed supplier networks where organizations have limited control over upstream production activities. Rather than representing separate management approaches, proactive and reactive practices appear to be highly interconnected within the organization's daily operations. The findings support this by highlighting that the category manage delivery delays through a combination of reactive operational coordination as well as proactive supplier management practices.

The case category attempts to reduce delivery-related risks proactively through forecasting, supplier collaboration, supplier monitoring and long-term capacity planning but despite the attempts, their effectiveness remains limited in practise since reactive coordination activities dominate day-to-day procurement and purchasing operations within the case category. Although Melnyk et al., (2010, p.36-38) emphasize that supply chain resilience and operational flexibility require improved information sharing and stronger coordination between supply chain partners, information gathered from the interviews highlighted that insufficient supplier communication already in the early stages reduce the category's ability to anticipate disruptions effectively and maintain proactive mitigation practices. Once critical delivery delay became visible, operational continuity strongly depends on reactive coordination mechanisms including urgent supplier communication, expedited transportation methods, alternative sourcing arrangements and continuous communication with other supply chain partners to maintain production continuity. Therefore, resilience does not solely depend on the ability to prevent disruptions in advance, but more on the organization's capability to respond, reprioritize and coordinate effectively under dynamic and changing operational conditions.

According to Masa'deh (2022, p. 3-4) operational performance in supply chain context refers to an organization's ability to maintain efficient and responsive operations in a dynamic and competitive environments. Supporting this perspective, the findings further suggest that delivery delays themselves are not the primary operational challenge.

Instead, the inability to identify and communicate disruptions early increases urgency and creates reactive, time-consuming coordination activities through the supply chain, which appears to weaken organization's ability to maintain the operational efficiency. This suggest that visibility should not be viewed as an informational or technological issue, but also as critical operational capability that directly affect the supply chain resilience. Therefore, the effectiveness of delivery delay management is determined less by the existence of delays themselves and more by the timing and transparency of supplier communication. As a result, organizations may become even more dependent only on reactive management practices. Therefore, effective and earlier communication is strongly connected to the management of delivery delays and are influenced by relational factors such as trust in supplier-buyer relationship.

Interestingly, the limited visibility act as a significant challenge in delivery delay management. The findings indicate that increased visibility into suppliers' production processes would increase effectiveness in delivery delays management. Improved access to real-time information regarding supplier's production status, capacity and emerging operational disruptions would enable the case company to identify potential delivery issues before formal supplier communication occurs. This would support proactive as well as improve reactive management practices. This supports also the buyer-supplier collaboration. The findings reveal that strong buyer-supplier relationships improve transparency, enable earlier communication and enhance overall responsiveness between the supply chain partners. Similarly to the findings of Shoukat et al., (2022, p. 187), the interview results support the statement that close collaboration and strong buyer-supplier relationships improve operational responsiveness and delivery continuity.

When companies become dependent primarily on reactive management practices, delivery delay management becomes increasingly resource-intensive, creating additional coordination activities and operational workload within the whole supply chain. This reduces the ability to anticipate disruptions proactively and weaken overall supply chain responsiveness and resilience. Moreover, the findings further reveal that in situations

involving shortages, changing priorities or operational uncertainty, suppliers are more willing to prioritize customers with whom they have established strong and collaborative relationships. Therefore, relationship quality can be viewed critical operational capability that supports delivery continuity, responsiveness and supply chain resilience during disruptions. Effective delivery delay management in global sourcing environments depends less on eliminating disruptions entirely and more on developing organizational capabilities that enable visibility, responsiveness, coordination and collaborative problem solving.

**RQ2.** What operational and cost implications do the delivery delays create?

As mentioned, when companies become primarily dependent on reactive management practices, delivery delay management becomes increasingly resource-intensive, creating additional coordination activities and operational workload throughout the supply chain. The findings of this study indicate that delivery delays create significant operational consequences, particularly in production operations. Production continuity is perceived as the most critical operational priority. These findings support the observations of Guiffrida (2008, p. 2150) who states that delivery disruptions increase coordination efforts and generate additional costs across the supply chain. Similarly, this study demonstrates that maintaining production continuity often requires additional resources and activities which further increase operational costs.

The findings further revealed that delays affecting critical materials require urgent operational responses to maintain production continuity. As stated within RQ1, once disruptions become visible, procurement and purchasing professionals rely primarily on reactive recovery practices. Therefore, operational continuity depends on organization's ability to react quickly during disruptions. From a cost perspective, procurement activities in urgent operational situations prioritize material availability and production flow over cost efficiency. Consequently, operational decisions made under time pressure make the broader financial consequences of disruptions difficult to identify and evaluate

systematically. These results support the observations of Angkiriwang et al., (2014, p. 54-55) who found that that organizations rely on reactive and flexible responses strategies to maintain operational continuity under supply chain uncertainty. Lastly, the findings highlight that rather than representing isolated logistical challenges, delivery delays emerge as interconnected operational disruptions affecting not only production continuity but also operational efficiency and moreover supplier evaluation.

When investigating more closely the cost implications from delivery delays, arranging an express delivery, sourcing from alternative suppliers and continuously coordinating delivery-related information between multiple stakeholders create extensive workload across the supply chain. Prompt recovery actions consume not only operational resources and coordination effort but also generate indirect and often hidden costs that remain difficult to identify. The findings are consistent with earlier empirical studies by Holweg et al. (2011, p. 335-336), which demonstrate that delivery disruptions generate indirect and often difficult-to-measure coordination and operational costs. Consequently, supplier-related costs extend significantly beyond direct purchasing prices and include broader product lifecycle-related consequences (Ellram 1993, p. 49).

While traditional procurement literature has often emphasized cost reduction and purchasing price optimization as central procurement objectives (Benton 2021, p. 33-35), the findings demonstrate that organizations are willing to tolerate significantly higher operational costs when production continuity is threatened. Therefore, maintaining supply continuity is prioritized over cost implications associated with delayed deliveries. In such situations, organizations often accept additional expenses, for example express deliveries and alternative sourcing arrangements in order to avoid the substantially greater costs associated with production interruptions. As a result, the immediate operational need to secure material availability frequently outweighs the systematic calculation of disruption-related costs.

The findings additionally support earlier studies by Benton (2021, p. 33-35; Ngo et al., (2024, p. 839), which suggest that organizations prioritize delivery reliability and supply continuity alongside traditional cost-efficiency objectives. However, the findings also demonstrate that many disruption-related costs remain difficult to identify and evaluate systematically, as managerial attention is primarily directed toward maintaining operational continuity. In addition, in this context the total cost of ownership (TCO) approach provides useful framework for identifying and analysing supplier-related costs beyond direct purchasing prices.

Moreover, TCO can also be operationalized through structured cost classification models. For instance, (Ellram et al., 1993, p. 167) identify key cost-driving activities such as communication, delivery management, price, quality and service. These activity-based categories enable organizations to systematically analyse how costs are generated across supplier relationships. Such classification improves cost transparency and supports more effective monitoring and evaluation of supplier performance as it links costs to specific operational activities and highlights their variability over time (Ellram et al., 1993, p. 167). However, the findings of this study suggest that applying such systematic costs evaluation in practice is challenging during disruptions. When production continuity is threatened, managerial attention is primarily directed toward securing materials and therefore leaving limited time and attention for comprehensive cost analysis. As a result, many disruption-related costs may remain only partially identified and evaluated despite the availability of structured cost management frameworks.

The findings demonstrate that delivery delays generate broader operational and financial consequences than direct purchasing or transportation costs alone. The implications of delivery delays extend throughout procurement, production planning and supplier coordination activities, where maintaining operational continuity overrides short-term cost efficiency considerations. Although organizations incur substantial indirect and hidden costs through recovery actions, these costs often remain only partially identified because managerial attention is primarily focused on restoring operations and

preventing production disruptions. Consequently, effective supplier management in global sourcing environments requires organizations to evaluate delivery disruptions not only through measurable financial impacts but also through broader operational consequences and hidden coordination costs.

## **5.2 Practical implications**

Based on the empirical findings, this section presents practical implications for organizations and professionals operating in procurement activities. These implications are organised into two key areas reflecting the main findings of the study.

First, for multinational companies, particularly procurement and supplier management functions, an important practical implication concerns improving visibility into suppliers' production capacity and potential bottlenecks. The findings suggest that organizations would benefit from more systematic capacity reviews and regular discussion with key suppliers regarding available capacity, workload levels and potential constraints. More attention should be given to suppliers providing critical or single-sourced materials, as disruptions affecting these suppliers may have operational consequences. In situations where supplier capacity is limited, these critical and single-sourced materials would be "anchored" and prioritized over other materials.

Improved visibility into supplier operations should also be reflected in supplier performance evaluation practices. Since the findings supported that other capabilities such as responsiveness, communication quality and transparency play critical role during disruption situations, incorporating these capabilities as well into the supplier evaluation within the monthly reviews could improve early risk assessment and the organization's ability to manage delivery-related disruptions more effectively. Regular capacity reviews could strengthen mutual understanding between buyer-supplier relationship and reduce dependence on reactive recovery actions. Overall, improved visibility into supplier capacity would enable earlier identification of delivery risks and support proactive mitigation actions before delays become operationally critical.

Secondly, the findings indicated that delivery delays are not solely supplier-driven phenomena since internal planning stability, frequent schedule modifications and changing technical requirements also contribute a lot to delivery disruptions. Therefore, organizations should focus not only on supplier development, but also on improving internal planning processes and clear alignment across functions. Given the dynamic nature of global supply chains, the objective should not be to eliminate all uncertainty but to improve organizations' ability to respond effectively to changing conditions. This requires however stronger cross-functional coordination, more structured communication between departments. By improving internal alignments and adaptability, organizations can reduce unnecessary pressure on suppliers and improve overall delivery reliability.

### **5.3 Limitations and future research**

This study was conducted as a single case study within one case category. Therefore, the findings are industrial and context-specific and cannot be directly generalized to all field of studies. In addition, the study was conducted from the perspective of the case category and suppliers themselves were not included in the interviews which limits the understanding of supplier-side visibility and development possibilities. As a result, the findings provide only a partial view of delivery delay management and may not fully capture supplier-side challenges, decision-making processes or communication practices.

Another limitation concerns the qualitative nature of the study. The findings are based on semi-structured interviews and therefore reflect the experiences, perceptions and interpretations of the respondents. Although the interview data provided rich insights, the study does not include objective operational performance data or quantitative measurements of delivery delay impacts.

Future research could therefore examine delivery delay management from the supplier perspective to provide a more comprehensive understanding of visibility-related

challenges, capacity constraints and coordination practices within global sourcing environments. In addition, since the findings highlighted the existence of indirect and hidden costs associated with delivery delays, future research could utilize quantitative methods to measure the financial impact of delivery delays more precisely and to examine how total cost of ownership (TCO) approaches could be applied to capture disruption-related costs more systematically.

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## Appendices

### Appendix 1. Interview Questions for Operational Purchasers

Background and role:	<ol style="list-style-type: none"> <li>1. Can you describe your current role and responsibilities?</li> <li>2. How long have you been working in your current role?</li> <li>3. How frequently do you work with the international suppliers?</li> </ol>
Experiences and causes of delivery delays:	<ol style="list-style-type: none"> <li>1. Based on your experience, what are the main causes of delivery delays with international suppliers? Can you describe a recent example?</li> <li>2. How frequently delivery delays occur on the international supplier side?</li> <li>3. How are delivery delays identified? Does the supplier provide information about the delays?</li> </ol>
Managing and monitoring delivery delays:	<ol style="list-style-type: none"> <li>1. What actions are typically taken once a delivery delay is identified?</li> <li>2. How do you monitor delivery delays?</li> <li>3. Considering the two previous questions, does a delivery delay impact processes differently depending on whether the supplier is international?</li> </ol>
Evaluation and mitigation of delivery delays:	<ol style="list-style-type: none"> <li>1. How is international supplier performance monitored?</li> <li>2. From your experience, what strategies and practices are most effective in mitigating delivery delays?</li> </ol>
Additional costs and operational impact:	<ol style="list-style-type: none"> <li>1. From your perspective, what operational impacts do delivery delays create?</li> <li>2. From your perspective, what types of additional costs do you associate with delivery delays from international suppliers? Can you describe such costs?</li> </ol>

Open comments:	com-  1. Is there anything else you would like to share about your present experience with delivery delays from international suppliers?
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## Appendix 2. Interview Questions for Strategic Purchasers

Background and role:	<ol style="list-style-type: none"> <li>1. Can you describe your current role and responsibilities?</li> <li>2. How long have you been working in your current role?</li> <li>3. How frequently do you work with the international suppliers?</li> </ol>
Experiences and causes of delivery delays	<ol style="list-style-type: none"> <li>1. How are delivery delays typically communicated?</li> <li>2. Based on your experience, what are the main causes of delivery delays with international suppliers? Can you describe a recent example?</li> <li>3. What actions are typically taken once a delivery delay is identified?</li> </ol>
Performance Indicators: Delivery Reliability	<ol style="list-style-type: none"> <li>1. Is delivery reliability or other supplier performance indicators considered in supplier selection?</li> <li>2. Are there any action that could be implemented already during the procurement process to reduce the future delivery delays?</li> </ol>
Pricing and supplier selection:	<ol style="list-style-type: none"> <li>1. How are supplier prices monitored?</li> <li>2. Besides the purchasing price, what other factors are considered in supplier selection?</li> <li>3. Does the organization analyse the additional costs caused by delivery delays?</li> </ol>

Continuous development:	1. From both a procurement and delivery delay perspective, what improvements could be made to reduce costs and enhance efficiency?
Open comments:	1. Is there anything else you would like to share about your present experience with delivery delays from international suppliers?

### Appendix 3. Interview Questions for Supplier Development Engineer

Background and role:	<ol style="list-style-type: none"> <li>1. Can you describe your current role and responsibilities?</li> <li>2. How long have you been working in your current role?</li> <li>3. How frequently do you work with the international suppliers?</li> </ol>
Delivery Delays:	<ol style="list-style-type: none"> <li>1. Based on your experience, what are the main causes of delivery delays with international suppliers? Can you describe a recent example?</li> <li>2. To what extent do you see quality challenges affecting delivery reliability in practise?</li> <li>3. What delivery-related indicators or performance measures are followed from the SDE perspective?</li> </ol>
Risk assessment in Supplier Selection:	<ol style="list-style-type: none"> <li>1. From your point of view how are delivery-related risks evaluated during the supplier selection?</li> <li>2. Is it possible to identify these risks earlier in the sourcing process?</li> </ol>
Supplier evaluation and Efficiency:	<ol style="list-style-type: none"> <li>1. From your point of view, are long-term supplier relationships more cost-effective?</li> <li>2. What evaluation criteria is most important when determining supplier capability?</li> <li>3. How are the costs related to delivery delays currently monitored from SDE's point of view?</li> </ol>
Quality Challenges and Delivery Reliability:	<ol style="list-style-type: none"> <li>1. How the internal dynamics affect supplier quality and delivery performance?</li> <li>2. What practical actions could improve both quality assurance and delivery reliability?</li> </ol>

#### Appendix 4. Interview Questions for Category Manager

Background and role:	<ol style="list-style-type: none"> <li>1. Can you describe your current role and responsibilities?</li> <li>2. How long have you been working in your current role?</li> <li>3. How frequently do you work with the international suppliers?</li> </ol>
Delivery Delays: Business Impact:	<ol style="list-style-type: none"> <li>1. How would you describe the significance of delivery delays within the category from both an operational and business perspective?</li> </ol>
Predictability and Proactive Delay Management:	<ol style="list-style-type: none"> <li>1. From your point of view, what changes would be needed and at which stages of the supply chain process, to make delay management more proactive?</li> <li>2. How could transparency and information sharing be improved across the category and with the supplier to identify delivery risks earlier?</li> </ol>
Supplier Capacity and Capability:	<ol style="list-style-type: none"> <li>1. How are supplier capacity and capability currently assessed?</li> <li>2. Do you see supplier resourcing and internal management capability as potential bottlenecks? To what extent should the company intervene in or supports suppliers' internal operational practices if such issues begin to affect performance?</li> </ol>
Cost Impact of Delivery Delays:	<ol style="list-style-type: none"> <li>1. How are the costs related to delivery delays currently monitored at the category level?</li> <li>2. Is comprehensive data available regarding the total cost of delays?</li> </ol>
Responsibility and Root cause:	<ol style="list-style-type: none"> <li>1. How significant do you see these internal factors in causing supplier underperformance?</li> </ol>

## **Appendix 5. The use of AI**

Artificial Intelligence (AI) tools have been utilized in this thesis to support the language editing, summarization and the academic tone of the text, while the final content reflects the author's own reasoning and interpretations.

The following tools were used to improve academic quality and translation of the thesis:

1. DeepL (2026)
2. OpenAI ChatGPT. (GPT-5.5) (2026)

The thesis was written by the author, while AI tools were used to support grammar correction, language refinement and alternative phrasing during the writing process. All AI-generated suggestions were reviewed before use, and the author is therefore responsible for the content and conclusions of this thesis. As English is not the author's first language, AI helped improving the clarity and academic tone of the text.