

# Towards environmental and economic sustainability through interorganisational postponement: a relational perspective

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## Abstract

**Purpose** – Firms face increasing pressure to reduce environmental impacts while maintaining cost-effective supply chains (SCs). Postponement has emerged as a promising strategy, yet existing research offers inconsistent evidence on its environmental and economic implications. In addition, the implementation of postponement relies on interorganisational collaboration, yet the relational processes underlying this implementation remain underexplored. This study aims to examine how interorganisational postponement is implemented and how it supports the joint pursuit of environmental and economic sustainability.

**Design/methodology/approach** – Drawing on the relational view (RV), the study analyses an in-depth single case of a UK-based multinational manufacturer implementing interorganisational postponement with three suppliers. Using a process-based approach, we examine interviews, internal documents and operational data to trace how the four sources of relational rents enable the implementation of postponement and how underlying relational mechanisms connect these sources to sustainability outcomes over time.

**Findings** – Interorganisational postponement implementation is enabled by complementary resources and capabilities, relation-specific assets, knowledge-sharing routines and effective governance, which operate through underlying relational mechanisms including resource convergence and divergence, asymmetric investment adaptation, information-processing capabilities and formalised governance. These mechanisms explain how partner fit changes, investment commitments adapt, knowledge is processed across firms and governance becomes more formalised as operational complexity increases. Through these mechanisms, interorganisational postponement contributes to sustainability rents, reflected in joint environmental and economic gains such as lower emissions, reduced waste, tariff savings and improved transport efficiency.

**Originality/value** – The study offers a relational and processual understanding of postponement's role in sustainable SC management by moving beyond a firm-centred, static view to explain how it unfolds across the SC. It illustrates how interfirm resources and relational mechanisms shape whether environmental and economic outcomes are jointly created and preserved. Accordingly, it extends the RV by providing a more nuanced understanding of the established sources of relational rents and the underlying relational mechanisms through which these sources evolve and contribute to sustainability rents, highlighting how interorganisational collaboration can co-create environmental and economic value through the implementation of postponement.

**Keywords** Postponement, Interorganisational postponement, Sustainability, Relational view

**Paper type** Research paper

## 1. Introduction

As the urgency of climate change intensifies, firms face growing pressure to manage their supply chains (SCs) with strategies that balance minimising environmental impact and optimising cost-effectiveness (Domfeh *et al.*, 2025; Sorooshian *et al.*, 2026; Um and Han, 2021). In this context, postponement has emerged as a potent concept to address these challenges. Traditionally,

postponement concerns delaying SC activities until more precise market information is available (Qrunfeh and Tarafdar, 2013; van Hoek, 1999; Zinn, 2019). Through the use of postponement,

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firms can leverage agile elements to decide when value is added: this strategy helps them manage unpredictable customer demands, improve responsiveness and reduce overall costs related to product variety, product customisation and logistics (Alptekinoglu *et al.*, 2023; Chen *et al.*, 2026; Christopher and Towill, 2000). In addition, postponement concerns managing where value is added to reduce costs arising from trade tensions, which exert extreme economic pressure on SCs (Cohen and Lee, 2020). Recently, scholars have identified cases where postponement can enhance environmental sustainability by minimising inventory-related waste and reducing carbon emissions (Le *et al.*, 2026; Simão *et al.*, 2016).

However, the sustainability implications of postponement remain underexamined and equivocal, with evidence on its combined environmental and economic effects being scarce and, where available, mixed (Le *et al.*, 2026; Yang *et al.*, 2005). This matters because postponement can generate coupled economic-environmental effects; for example, implementing postponement can elevate costs and energy consumption through additional handling, smaller batches or duplicated setups (Forza *et al.*, 2008; Trentin and Salvador, 2023), thus potentially undermining economic performance and, in some contexts, offsetting environmental gains (Yang *et al.*, 2005). These tensions may be intensified under trade disruptions and tariff pressures, which heighten financial strain and can deprioritise investments in environmental improvement (WEF, 2025). In such situations, firms seek to improve environmental and economic sustainability simultaneously; even when this is not possible, they need to understand the economic effects of achieving specific levels of environmental sustainability. Consequently, these aspects suggest a need for more in-depth, mechanism-based research that explains how postponement implementation shapes environmental and economic sustainability outcomes through interorganisational relationships, rather than treating the two outcomes in isolation (Prataviera *et al.*, 2026; Simão *et al.*, 2016).

Moreover, as an SC concept (Boone *et al.*, 2007), effective postponement necessitates interorganisational perspectives (Prataviera and Norrman, 2024; van Hoek, 1999, 1997). Yet, work that fully conceptualises postponement as an interorganisational phenomenon remains limited and the literature continues to treat it largely as a single-firm design choice (Prataviera and Norrman, 2024; Zinn, 2019), thereby obscuring how the benefits and burdens of postponement are distributed among SC partners. This narrow view has not only encouraged opportunistic behaviour, as a firm's vision remains bounded within the firm and it may seek to shift risk elsewhere by pushing inventory burdens to partners (García-Dastugue and Lambert, 2007; Phares and Richey, 2021), but also hindered the connection between postponement effects and sustainability-related performance, which increasingly requires an SC-wide assessment (Wieland, 2021). In practice, many contemporary postponement initiatives require the reallocation of tasks, information and responsibilities across organisational boundaries (Prataviera and Norrman, 2024; Qrunfleh and Tarafdar, 2013). In this sense, postponement implementation hinges on the relational configuration of resources, investments, knowledge-sharing routines and governance arrangements across firms – features that distinguish interorganisational postponement from its intrafirm counterpart and can contribute to achieving sustainability goals (Trentin *et al.*, 2015). Taken together, these

gaps indicate a limited understanding of how interfirm relationships enable interorganisational postponement implementation and how the underlying relational mechanisms shape environmental and economic outcomes over time.

Accordingly, in this study, we examine how interorganisational postponement is implemented through interfirm relationships and how this implementation process shapes sustainability outcomes. We draw on the relational view (RV) (Dyer and Singh, 1998) as our theoretical lens because it emphasises how a firm's critical resources and capabilities may extend beyond its boundaries and be embedded in interfirm relations. Such ties can produce relational rents – that is, “supernormal profits jointly generated in an exchange relationship” (Dyer and Singh, 1998, p. 662). The theory identifies four sources of relational rents that help explain how collaborative value is generated across organisational boundaries, making it suitable for examining interorganisational postponement and its relationships across SCs. We thus defined the following research question:

*RQ1.* How do the sources of relational rents enable and evolve through the implementation of interorganisational postponement to shape environmental and economic sustainability outcomes in supply chains?

To address the question, empirical evidence is gathered from an in-depth single-case study of a UK-based multinational firm that implements interorganisational postponement with three of its suppliers, considering environmental and economic outcomes and further focusing on the evolution of postponement through a process-based approach (Langley, 1999; Pettigrew, 2012). This approach allowed for the identification, analysis and interpretation of the complex interdependencies that characterise SC phenomena such as interorganisational postponement and was appropriate within domains where evolving interorganisational relations need to be conceptualised and mapped over time (Langley *et al.*, 2013). The process approach also enabled consideration of contextual influences and underlying relational mechanisms, illuminating how fluid and interwoven processes within SCs and their environments evolve, particularly in increasingly fragmented global contexts (Grimm *et al.*, 2024).

Empirically investigating postponement implementation from an interorganisational perspective, while also considering the environmental and economic outcomes, offers two key contributions. First, by applying the RV as our theoretical lens, we deepen the understanding of how interorganisational postponement unfolds through the four sources of relational rents, which jointly shape the implementation of postponed activities across multiple stakeholders. Our findings show how these sources create conditions for environmental and economic improvements, such as reduced emissions, waste and tariffs. Moreover, we show that such improvements arise when relationally enabled reconfiguration removes operational inefficiencies that generate both economic costs and environmental burdens. Second, we elaborate on the RV by identifying underlying relational mechanisms – namely, resource convergence and divergence, asymmetric investment adaptation, information-processing capabilities and formalised governance – through which these sources operate and evolve during

implementation. These mechanisms help explain the emergence of sustainability rents, defined as relationally generated economic gains accompanied by environmental improvements through ongoing SC collaboration. These insights also clarify why postponement outcomes vary across settings and how relational rents evolve over time.

In the next sections, we summarise the related academic literature and present our methodological approach. We then illustrate and discuss the study's findings before synthesising the research implications and drawing conclusions.

## 2. Theoretical background

### 2.1 The evolution of postponement as a supply chain concept

Postponement literature traces its origins to 1950, when Alderson (1950) argued that delaying a differentiating manufacturing stage could lower costs by aligning operations with customer orders, thereby mitigating the impact of demand uncertainty. As a concept, postponement was later described in various types based on the delayed operations, such as manufacturing and logistics (Boone et al., 2007). More recently, postponement has been discussed in terms of four dimensions – when, what, where and who – capturing the timing, content, location and actor configuration of the delayed activities (Cohen and Lee, 2020; Prataviera et al., 2020; Prataviera and Norrman, 2024).

However, the extant literature usually discusses postponement according to two dimensions: the *when* – that is, determining the time customer demand is triggered and the optimal timing for adding value in the SC – and the *what* – that is, considering which value-adding activities can be delayed (Alptekinoglu et al., 2023; Harrison and Skipworth, 2008). The literature suggests two main thresholds for the former dimension: as late as possible according to forecasts or to order (Forza et al., 2008; Prataviera et al., 2020). The assumption is that as the waiting time increases, demand information becomes clearer, enabling firms to better align supply with demand, which in turn, improves capacity allocation, reduces waste and enhances resource efficiency (Christopher and Towill, 2000; Yang et al., 2004). The latter dimension has been examined mainly in manufacturing and logistics-related activities, often through related activities such as modularisation (e.g. Budiman and Rau, 2019; Forza et al., 2008) and standardisation (e.g. Jabbarzadeh et al., 2019). These studies also account for contextual factors linked to product and process characteristics, such as product variety, value density, obsolescence rate and manufacturing flexibility (Chiou et al., 2002; Pagh and Cooper, 1998; Van Kampen and Van Donk, 2014) with the aim of identifying the conditions under which such postponement-related activities enable postponement implementation within individual firms.

Although postponement is typically associated with when and what value is added, an equally important dimension concerns *where* operations occur. Specifically, this dimension addresses two perspectives on location: SC tiers (Pagh and Cooper, 1998) and geographical contexts (Cohen and Lee, 2020; Prataviera et al., 2020). While the former perspective explores strategic inventory allocation across SC tiers, such as centralised inventories (e.g. Nair, 2005; Ugarte et al., 2016), the latter is more relevant in the international SC, where firms

determine the most suitable markets in which to conduct delayed operations (e.g. Varas et al., 2018; Varsei et al., 2017). This approach thus incorporates country-level contextual factors, such as geographical dispersion and trade policies. For instance, greater geographical dispersion brings tariffs and other country-specific requirements, inevitably growing cross-border trade complexity and encouraging firms to relocate downstream operations to distribution facilities closer to local markets (Prataviera et al., 2020).

As the global business environment has become more dynamic, the need to widen the lens to view postponement outside of individual organisations has also been recognised (Christopher and Holweg, 2017; Prataviera and Norrman, 2024; Qrunfeh and Tarafdar, 2013), paving the way for an important dimension concerning *who* is involved in the postponed activities. For example, finding the right suppliers across jurisdictions is also driven by rising legal compliance risks, which can outweigh the effects of prevailing decisions on the timing and selection of postponed activities (Prataviera and Norrman, 2024). Without effective supplier collaboration, postponement can heighten complexity and erode profitability (Qrunfeh and Tarafdar, 2013). Focusing on the *who* dimension is essential, as it underscores the interorganisational perspective of postponement and highlights how its effectiveness depends on the quality of collaborative relationships across SC partners. Nevertheless, previous scholars have mostly focused on economic outcomes (e.g. Trentin, 2011; van Hoek, 1997), without examining environmental implications or theorising relevant relational mechanisms.

### 2.2 Postponement and the potential for addressing environmental and economic sustainability issues

Postponement is widely recognised for its economic benefits, but its environmental implications remain inconsistent (Le et al., 2026; Simão et al., 2016). Much of the research to date highlights enhanced operational efficiency, reduced inventory holding costs (Prataviera et al., 2026; Yang et al., 2004) and improved service levels, such as shorter delivery lead times and increased delivery reliability (Christopher and Towill, 2000; Guericke et al., 2012). Nevertheless, these benefits may also entail trade-offs, acknowledging potentially adverse or mixed effects across different performance dimensions (Chen et al., 2026; Forza et al., 2008; Salvador et al., 2007), including the environmental one (Simão et al., 2016). For example, through centralised inventories, postponement can reduce inventory costs via risk-pooling effects (Zinn, 2019), but may simultaneously undermine transport efficiency by increasing shipment frequency and volume, thereby raising costs and contributing to congestion (Yang et al., 2005). Conversely, delayed and localised manufacturing activities may reduce transport costs by eliminating haulage between facilities but incur higher processing costs due to duplicated fixed assets downstream (Forza et al., 2008; Pagh and Cooper, 1998). Therefore, from SC perspectives, implementing postponement can shift costs and externalities across SC activities rather than uniformly improving performance.

Only a few studies have explored how postponed operations can contribute to achieving environmental goals across key indicators, such as greenhouse gas (GHG) emissions, resource consumption and waste generation (e.g. Jabbarzadeh et al., 2019; Simão et al., 2016). This smaller stream explicitly evaluates

environmental impacts alongside economic outcomes, often by leveraging mathematical modelling to compare alternative postponement strategies. For example, Simão *et al.* (2016) suggested that applying logistics postponement (e.g. transport and warehousing) can reduce total order delivery time and CO<sub>2</sub> emissions. However, it can also increase transport-related emissions when disassembled parts must be shipped across multiple lanes or faster, more carbon-intensive delivery modes are required to meet shorter lead times. Conversely, postponement in assembly or manufacturing can have slightly adverse effects, as it may reduce transport capacity utilisation and increase inbound logistics traffic within the SC, thereby potentially worsening environmental impacts. Ugarte *et al.* (2016) indicated that manufacturing postponement decreases SC emissions by enhancing the manufacturing system's flexibility in managing uncertainty, thereby reducing transport-related emissions while slightly increasing facility-related emissions. Jabbarzadeh *et al.* (2019) also examined the trade-offs between economic and environmental objectives in the context of postponement, highlighting that this strategy can consistently generate cost savings for the SC, with benefits increasing as demand variability increases. Budiman and Rau (2019) concluded that postponement through product/process modularisation and standardisation could further improve environmental and economic sustainability performance, particularly under stringent environmental policies. Considering the international aspects of postponement (i.e. geographical regions), Varsei *et al.* (2017) examined global labelling/packaging postponement in the wine industry. Their findings suggest that localised manufacturing, such as constructing bottling plants closer to markets, can balance trade-offs between reduced carbon emissions, natural resource risks and the costs of new facilities. Harrison and Skipworth (2008) also emphasised the environmental implications of different transport modes, routes and packaging formats, showing how postponement strategies can reshape international SCs to improve selected economic and environmental outcomes.

Overall, earlier studies indicate that postponement can deliver economic benefits and, in some contexts, environmental improvements. However, evidence on combined environmental-economic effects remain limited and often indicates trade-offs. Much of this evidence is derived from modelling or scenario-based comparisons of postponement implementations, which clarify what outcomes may occur but offer limited explanation of how such outcomes arise or the underlying interorganisational aspects. Table 1 synthesises these gaps by drawing on related studies examining the effects of postponement on SCs' economic and environmental outcomes.

### 2.3 Interorganisational postponement: a relational view

Although postponement holds significant potential to address SC environmental and economic sustainability issues, the mixed effects observed so far create a fragmented picture, with almost all confined to a single-firm perspective (Pratavia *et al.*, 2024; Zinn, 2019). This fragmentation hinders a comprehensive understanding of the concept, requiring going beyond the boundaries of a single firm and necessitating a broader approach to capture its multifaceted dimensions. Rather than adopting a firm-centric orientation, which offers limited leverage to explain how sustainability outcomes emerge through collaboration (see e.g. Phares and Richey, 2021;

Pratavia *et al.*, 2026), we focus on external and interfirm relationships, thus building a conceptual alignment between postponement and the RV theory (Dyer *et al.*, 2018; Dyer and Singh, 1998).

The RV provides a solid theoretical framework for capturing how firms co-create value by coordinating resources across organisational boundaries. By collaborating with partners, firms can create *relational rents* – supernormal profits generated through joint efforts beyond the internal rents derived from a firm's own resources (Weber *et al.*, 2016). The mechanisms through which these benefits emerge originate from four sources of relational rents: complementary resources and capabilities, relation-specific assets, knowledge-sharing routines and effective governance (Dyer and Singh, 1998), which are useful for explaining the implementation of postponement in SCs.

First, complementary resources and capabilities highlight the synergies that arise when diverse resources and capabilities are aligned across firms (Weber *et al.*, 2016). In the postponement literature, Van Hoek (1997) examined the SMART car case, illustrating how postponement involved extensive outsourcing and subcontracting with suppliers, enabled by process and system compatibility, thereby creating virtual integration. Such complementarity can enable partners to combine local operational capacity with focal-firm product and planning capabilities to execute delayed activities effectively. Second, relation-specific assets are site-specific physical and human assets tailored to the needs of a particular relationship (Williamson, 1981). This is relevant as postponement demands flexibility – the ability to access additional capacity as needed, not only within a firm but also through partners across the network – to accommodate frequent changes (Christopher and Holweg, 2017). Third, knowledge-sharing routines are defined as institutionalised inter-firm processes that facilitate partner knowledge exchange (Weber *et al.*, 2016). These routines are important for implementing postponement, as complex information flows among SC members can hinder informed decision-making (Trentin *et al.*, 2012; Yang and Yang, 2010). Fourth, effective governance is primarily self-enforcing, reducing contracting and monitoring costs (Williamson, 1981). In collaborative relationships, as in interorganisational postponement, these governance mechanisms often include informal yet crucial elements, such as trust, that help maintain the continuity and stability of partnerships (Phares and Richey, 2021).

However, while the RV specifies sources of relational rents that can generate benefits, it is less explicit about relational mechanisms through which the original sources become consequential for the benefits (Dyer *et al.*, 2018; Touboulic and Walker, 2015), particularly under which these mechanisms translate into aligned environmental and economic outcomes (Tate *et al.*, 2022). In this regard, the postponement literature often reports positive effects of relational mechanisms (e.g. Christopher and Holweg, 2017; Qrunfleh and Tarafdar, 2013); however, other scholars have also suggested that these effects are not automatically generated. For example, buyers and suppliers may deploy their organisations' financial, human and technological resources in different ways (Trentin *et al.*, 2015, 2012), which can yield divergent and sometimes unintended

**Table 1** Related studies investigating the effects of postponement on both economic and environmental outcomes of SCs

| Related studies                    | Methods                | Contextual factors*         | Postponement dimensions being considered |      |       |     | Related activities across manufacturing, warehousing and transport* | Related environmental and economic sustainability* |                                             |
|------------------------------------|------------------------|-----------------------------|------------------------------------------|------|-------|-----|---------------------------------------------------------------------|----------------------------------------------------|---------------------------------------------|
|                                    |                        |                             | What                                     | When | Where | Who |                                                                     | Economic performance                               | Environmental performance                   |
| (Yang <i>et al.</i> , 2005)        | Conceptual study       |                             | ✓                                        | ✓    | ✓     | –   | (1), (3), (4)                                                       | Inventory and transport cost                       | Traffic congestion and pollution levels     |
| (Simão <i>et al.</i> , 2016)       | Simulation modeling    | Product and process-related | ✓                                        | ✓    | –     | –   | (3)                                                                 | Inventory and transport costs, responsiveness      | CO2 emissions in outbound transport         |
| (Ugarte <i>et al.</i> , 2016)      | Simulation modeling    | process-related             | ✓                                        | –    | ✓     | –   | (1), (3), (4)                                                       | Cost, quality and responsiveness                   | GHG emissions, facility-related emissions   |
| (Varsei <i>et al.</i> , 2017)      | Analytical modeling    | Product and country-related | ✓                                        | –    | ✓     | –   | (3), (4)                                                            | Operational costs, transport cost                  | CO2 emissions, water availability and usage |
| (Harrison and Skipworth, 2008)     | Analytical modeling    | Product and country-related | ✓                                        | –    | ✓     | –   | (2), (3), (4)                                                       | Operational costs                                  | GHG emissions                               |
| (Jabbarzadeh <i>et al.</i> , 2019) | Optimisation modelling | Product and country-related | ✓                                        | –    | ✓     | –   | (2), (3)                                                            | Operational costs                                  | GHG emissions                               |
| (Budiman and Rau, 2019)            | Optimisation modelling | Product and country-related | ✓                                        | –    | ✓     | –   | (1), (2), (4)                                                       | Operational costs                                  | GHG emissions, carbon tax and cap           |

**Note(s):** \*Specific contextual factors, related activities and environmental and economic outcomes are built on the literature (Supplementary Appendix 1). (1) Product/process modularisation; (2) Product/process standardisation; (3) Centralisation of inventories; (4) Localised manufacturing

**Source(s):** Authors' own work

outcomes. Moreover, prior literature has conceptualised relational rents as a source of economic value, leaving their potential for advancing sustainability-oriented outcomes underexplored (Tate *et al.*, 2022). This limitation creates a critical tension: postponement is increasingly expected to deliver both economic and environmental benefits, but the current form of rents limits the explanation of how such dual outcomes emerge.

In summary, prior research shows that postponement has evolved from a firm-level decision towards a broader SC concept encompassing when, what and where value is added and increasingly, who is involved. However, this conceptual broadening has not been matched by interorganisational theorisation: postponement is still largely examined from a single-firm perspective, offering only a partial explanation of how interfirm relationships enable implementation and shape SC performance. Evidence on sustainability outcomes is also limited and mixed – often based on modelling or scenario comparisons – which clarifies what outcomes may occur (Table 1) but explains less about how coordination, governance and supplier relationships shape the alignment or trade-offs between environmental and economic outcomes when postponed activities are redistributed across organisational boundaries (Garcia-Dastugue and Lambert, 2007; Prataviera and Norrman, 2024). Addressing these limitations, this study examines interorganisational postponement to explain how relational mechanisms contribute to environmental and economic sustainability,

thereby extending the concept of relational rents towards sustainability.

### 3. Methodology

#### 3.1 Research strategy

We followed a research strategy pursuing theory elaboration through case research, as it offers the possibility of challenging and developing existing theory to fit idiosyncratic empirical contexts (Ketokivi and Choi, 2014). Specifically, we elaborated on the RV by investigating the connections between critical sources of relational rents (Dyer and Singh, 1998) and the evolving dimensions of postponement (when, what, where and who) in the context of interorganisational postponement and SC environmental and economic sustainability. To achieve this, we used a process-based approach (Langley, 1999; Grimm *et al.*, 2024) that simultaneously explored the links among the context, the process of change and outcomes, as well as their interconnections over time. This approach provided a robust, structured lens for investigating the implementation of postponement, illustrating how postponement-driven change can trigger specific activities inferred from the context and subsequently linked to the change's outcomes.

#### 3.2 Research design

##### 3.2.1 Case selection

As we pursued theory elaboration (Ketokivi and Choi, 2014), we defined selection criteria to identify suitable cases that would yield the maximum conceptual insights. First, the case

must involve the implementation of postponement across multiple organisations, including a focal firm and its suppliers. In addition, information related to relationships should be provided (whether direct or indirect). Second, the focal firm should demonstrate a commitment to sustainability, typically reflected in its mission statement, thereby enabling access to sensitive data on the economic and environmental aspects of postponement. Third, given the established application of postponement in manufacturing and logistics (Le et al., 2026), the focal firm is required to operate in manufacturing SCs, where tangible product flows can directly link to environmental issues such as resource efficiency and emissions (Jabbarzadeh et al., 2019), compared to service sectors managing intangible products.

Accordingly, our case involves a focal firm, a UK-based multinational firm in the fast-moving consumer goods (FMCG) sector that adopts interorganisational postponement, enabling the phenomenon to be studied in its real-life context. Three of the focal firm's suppliers (A, B and C) have been involved in the implementation process, each assuming a different role. Supplier A and Supplier B were responsible for co-packing services and packaging supply, respectively, in the early stages. Meanwhile, Supplier C, which was initially solely responsible for storage, later assumed responsibility for co-packing execution in the Irish market.

We chose this case and opted for a single-case study design for several reasons. First, the FMCG industry has long been considered an ideal context for studying postponement due to product and process characteristics such as perishability and logistics flexibility (e.g. van Hoek, 1999, 1997; Van Kampen and Van Donk, 2014). Second, collectively, with respect to strict logistics service requirements for third-party outsourced postponement (e.g. short lead times), suppliers that want to contribute to the optimisation of the food SC need to acquire specific capabilities, resources and knowledge, fostering long-term supplier relationships (Trentin, 2011). This aspect provided insights by capturing SC relationships, making the case highly valuable for understanding the interorganisational aspects of postponement. Third, the choice of the focal firm is justified, as it represents a unique and critical case (Siggelkow, 2007) due to its years of experience implementing postponement in its SC and its extensive international networks and facilities, which may provide insights for other firms facing postponement-related challenges in interorganisational settings. Importantly, this case allowed us to investigate the implementation process of changes resulting from past, current and future postponement, thereby adding another layer of depth to this study (as discussed below). The evolving implementation made the case theoretically revelatory, allowing us to trace how supplier roles change over time and how these changes affected relational mechanisms across different implementation stages. Eventually, the case enabled us to contextualise and extend the RV by illustrating how the generation of relational rents can evolve beyond economic value to include environmental benefits – what we later conceptualise as “sustainability rents”. Although a single case may limit statistical generalisability, the rich information it provides allowed for investigating interorganisational postponement and its economic and environmental implications, enabling an in-depth, context-specific analysis

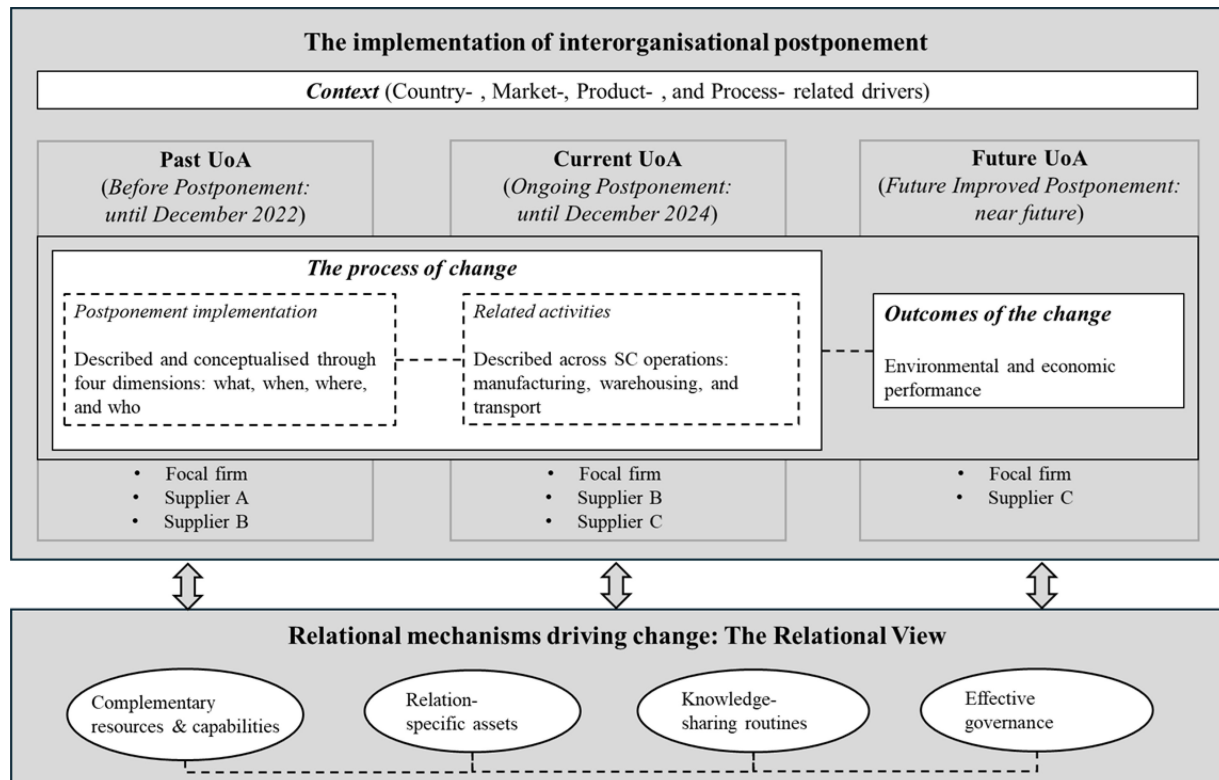
that aligns closely with our research question (Siggelkow, 2007; Yin, 2018).

### 3.2.2 Case setting

Following the temporal bracketing technique typical for a process-based approach, we identified three embedded units of analysis (UoAs), defined as “discrete but connected blocks” (Langley, 1999, p. 703) which are a past scenario, including actions that happened before the postponement applied (before December, 2022), a current scenario including actions of ongoing postponement until December 2024 and a future improved scenario, which involves the focal firm's plans for postponement improvements in the near future. The future improved UoA was incorporated as a deliberate and analytically grounded extension of this temporal design. It draws on real operational artefacts – tariff calculations, co-packing quotations, emissions models and documented planning exchanges – that the focal firm and its suppliers routinely use to evaluate forthcoming postponement strategies. Embedding such a future-oriented perspective allows the analysis to consider not only empirical reality but also plausible alternative implementations, thereby capturing the interplay of past, present and anticipated futures in strategic change (Gümüşay and Reinecke, 2022; Pettigrew, 2012). This perspective aligns well with calls for explicit discussion of SCM research that helps imagine and construct more effective and sustainable SC arrangements (Grimm et al., 2024; Pflueger et al., 2024). Comparing these scenarios also enabled pattern matching and the identification of recurrent actions over time, thereby enhancing internal validity and supporting causal inference (Yin, 2018). Figure 1 synthesises and illustrates our case setting.

One of the most challenging aspects of this case study is the heterogeneity of process data, which complicates analysis and interpretation, particularly in determining where to begin and what to prioritise (Langley, 1999). To address these, we strictly adopted an analytical framework tailored through three key considerations: context, process of change and outcomes (Pettigrew, 2012) to trace how the focal firm implemented postponement. Consistent with the RV, the *locus* of analysis focuses on the focal firm's sources of relational rents across the three suppliers, each contributing differently to the development and outcomes of postponement strategies through the four sources of relational rents (Dyer and Singh, 1998).

The first consideration, *context*, refers to the environment in which the change process unfolds. In this study, contextual factors encompass product-related characteristics, such as variety and obsolescence, as well as process-related factors, including flexible manufacturing systems. In addition, market and country-specific factors, including demand uncertainty and regulatory influences, including trade and environmental policies, all potentially shape the implementation of postponement (Supplementary Appendix 1). Second is the *process of change*, which captures the specific sequence of actions that constitute the change and reflects its dynamic nature as a progression of events over time (Pettigrew, 2012). The process includes *postponement implementation*, described through its four dimensions (what, when, where and who) and the *related activities* identified in the literature. The third consideration is

**Figure 1** A process-based research design incorporating the relational view theory

Source: Authors' own work

the *outcome*, which relates to what is being explained and must be clearly identified and, where possible, traceable through empirical evidence. Rather than conducting a comprehensive environmental impact assessment, this study examined the environmental and economic performance dimensions that became salient during postponement implementation and could be traced across multiple sources. These included transport emissions, damage-related waste, material handling, resource consumption, tariff charges, inventory-related inefficiencies, packaging and co-packing costs, handling costs and responsiveness. These considerations of the analytical framework provided a literature-informed, evaluative frame of reference (Grimm et al., 2024; Langley et al., 2013), guiding our analytical starting point and determining what should be considered relevant, thereby directly addressing the complexity posed by heterogeneous data.

### 3.3 Data collection

Data for this study were collected through semi-structured interviews, internal documents (e.g. standard operating procedures) and archival records, including legal and financial data (e.g. production approvals, cost spreadsheets). This multi-source approach enabled triangulation across interview accounts, operational documents, cost records, sustainability-related analyses and planning exchanges, thereby enhancing construct validity and strengthening the robustness of the resulting theoretical insights (Yin, 2018). This was particularly

important for examining environmental and economic outcomes, as the study relied on process-based evidence to trace how outcome dimensions were identified, assessed and linked to postponement implementation, rather than treating them as standalone performance estimates. Interviewees were carefully selected based on their ability to provide detailed accounts of their experiences with the implementation of postponement, rather than for quantitative considerations (Grimm et al., 2024) (Table 2).

Although the number of interviewees from the focal firm was relatively small, five key individuals were selected as directly involved in the interorganisational postponement implementation, spanning various cross-functional departments and hierarchical levels thus increasing increase confirmability and conceptual insights from different perspectives (Yin, 2018).

Interview data were collected between June 2023 and July 2025. Interviews lasted 40 min on average, following a process-oriented structure (context, process of change and outcomes; Supplementary Appendix 2) and covering both the preliminary review of postponement applications within the focal firm and follow-up insights into how close the firm and its suppliers are to implementing the improved future postponement plan. Section 1 focused on the general context and gathered qualitative data specific to the focal firm, including opinions and motivations for applying postponement. Section 2 targeted postponement implementation by asking four questions (when, what, where and who) and examined the corresponding

Table 2 Overview of interviewees and documentation and archival records used

| Interviewee position (interview ID)                                                  | Actor      | How actors relate to the postponement implementation                          | No. of interviews | Documentation and archival records                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------------------------|------------|-------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Logistics project managers, head of distribution network, warehouse contract manager | Focal firm | Key contacts of the focal firm and leaders of the postponement projects       | 3                 | <ul style="list-style-type: none"> <li>Standard operating procedures (SOPs) with suppliers</li> <li>Quality guidelines for co-packing, including protocols for product handling, packaging and safety compliance</li> <li>Spreadsheets recorded costs for shippers' operations</li> <li>Presentations of the year's plans for sustainability</li> <li>Sustainability analysis and waste reports</li> <li>Email exchanges</li> </ul> |
| Head of Distribution Network (FF-1)                                                  | Focal firm | The project leader                                                            | 5                 |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Warehouse Contract Manager (FF-2)                                                    | Focal firm | In charge of operations with supplier C                                       |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Third-Party Planner (FF-3)                                                           | Focal firm | In charge of distribution operations with suppliers A, B and C                | 2                 |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Distribution Costing Analyst (FF-4)                                                  | Focal firm | In charge of distribution costs relating to postponement                      | 2                 |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Logistics Sustainability Lead (FF-5)                                                 | Focal firm | In charge of transport relating to postponement                               | 4                 |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Third-Party Contract Manager (FF-6)                                                  | Focal firm | In charge of relationship management with Supplier A                          | 2                 |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Suppliers' interviews</b>                                                         |            |                                                                               |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Interviewed indirectly through the focal firm's interviewees                         | Supplier A | Providing co-packing services for the shippers in the past UoA                | –                 | <ul style="list-style-type: none"> <li>Production approval form process for full-scale shippers' production</li> <li>Documentation of training processes for co-packing</li> <li>Email exchanges</li> </ul>                                                                                                                                                                                                                         |
| Client Director (SB-1)                                                               | Supplier B | Supplying the shipper packages in the past and current UoAs                   | 3                 |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Operations Manager (SC-1)                                                            | Supplier C | Providing co-packing services for the shippers in the current and future UoAs | 3                 |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Senior Operations Manager (SC-2)                                                     | Supplier C |                                                                               |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <i>Total no. of interviews and data documentation</i>                                |            |                                                                               | 24 (~ 320 pages)  |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Source(s):</b> Authors' own work                                                  |            |                                                                               |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                     |

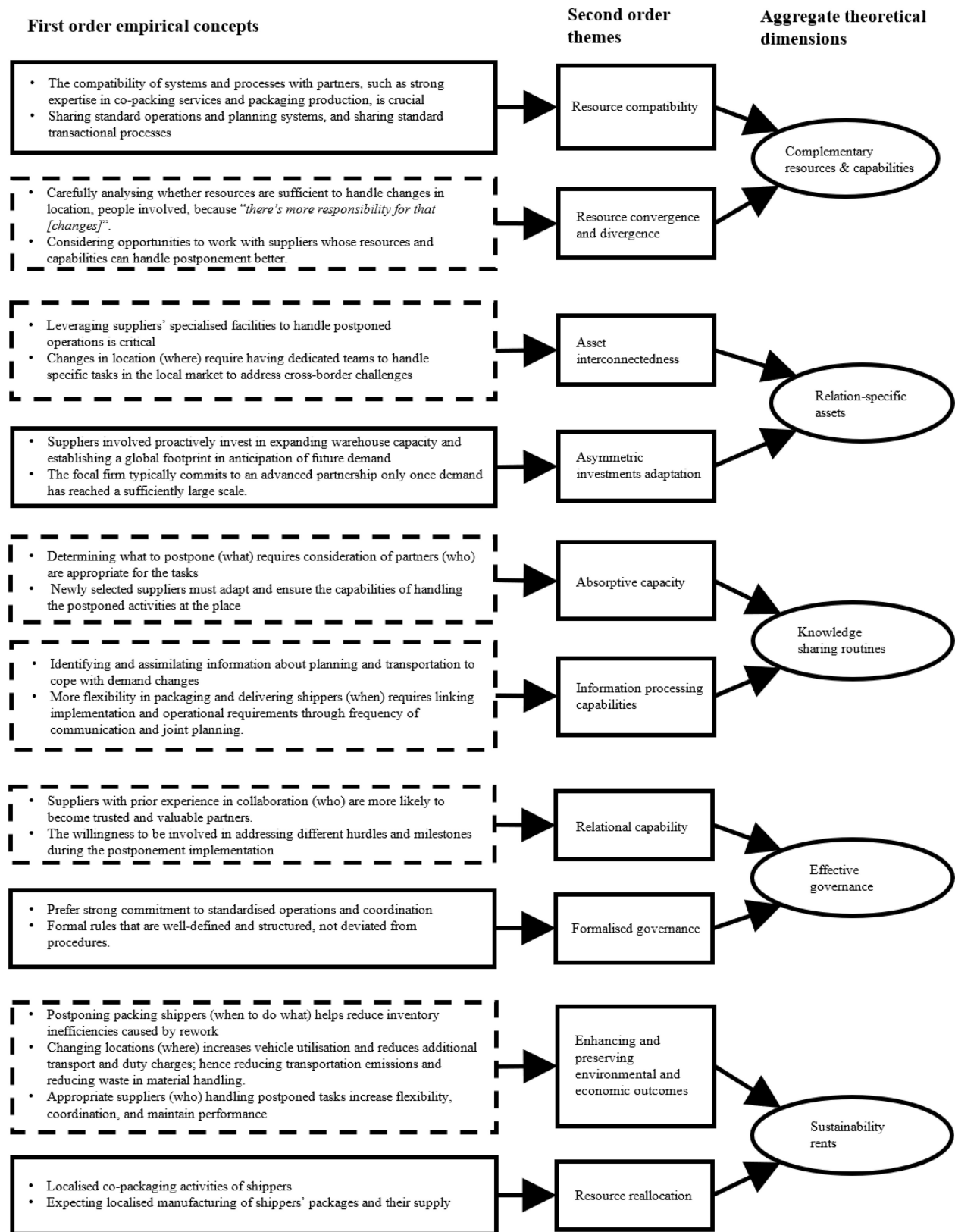
changes across SC operations such as manufacturing, warehousing and transport. Finally, we asked interviewees to share their perspectives and specify the performance metrics they used to evaluate outcomes.

To collect data on supplier relationships that contribute to interorganisational postponement, we first infused a relational perspective by asking, "Who is involved with the postponed activities?" during interviews with the focal firm. This question allowed us to dig deeper into the relationships by discussing opportunities and challenges encountered during postponement implementation. Second, we directly interviewed (when possible) the suppliers involved and asked them to share their views on the relationship with the focal firm, centring the conversations around the four sources of relational rents as posited by the RV (Appendix 2). However, access to Supplier A was not feasible because the firm was no longer part of the active postponement implementation in the UK market and had terminated its co-packing role prior to data collection. This change in status, combined with commercially sensitive negotiations surrounding the transition away from Supplier A, prevented the focal firm from enabling direct contact. Due to the inherent issues in process-oriented studies (Grimm et al., 2024), we interviewed only two suppliers: B and C. To ensure analytical rigour despite this constraint, we reconstructed Supplier A's role using multiple sources, including interviews

with the direct focal-firm manager, who had worked closely with Supplier A and operational process documents from the period when Supplier A was active. Another issue is that access to supplier interviews was initially facilitated by the focal firm, potentially introducing asymmetry. To manage this, we triangulated supplier data and their responses with archival records and internal documentation. After data collection, the interviewees reviewed and approved preliminary notes and transcriptions to ensure data validity and accuracy, thus enhancing the study's overall reliability (Yin, 2018).

### 3.4 Data analysis

We adopted a three-step data analysis approach, following the general guidelines of Gioia et al. (2013), as illustrated in the data coding structure (Figure 2). Consistent with a theory-elaboration design, we used abductive reasoning, iteratively engaging with existing theory and empirical data to refine and extend our understanding (Ketokivi and Choi, 2014). This approach allowed us to reaffirm the three considerations – context, change content and outcomes embedded in the literature-informed framework (Supplementary Appendix 1) and establish their connections to the sources of relational rents in the RV (Supplementary Appendix 3). Accordingly, coding emphasised interactional and processual mechanisms rather than static attributes. Differences between the focal firm and

**Figure 2** Data structure for coding and aggregation process

Source: Authors' own work

suppliers' perspectives, for example, regarding *asymmetric investment adaptation*, were treated as analytically meaningful and clarified through follow-up interviews, allowing them to be interpreted as emergent relational dynamics rather than inconsistencies (Langley, 1999; Langley et al., 2013).

The first analytical step generated first-order empirical concepts that remained closely grounded in the interviewees' experiences and reflected their differentiated responsibilities within interorganisational processes. Our abductive reasoning was documented through dashed-line boxes, illustrating how postponement dimensions (what, where, who and when) emerged from the data – for example, “Postponing packaging shippers (what) and moving it nearer to the market (where)” and “Determining partners (who) to undertake actions in the new market (where) is crucial” – that were systematically compared with established literature (in solid boxes) to reveal how relational complementarities evolved over time, including shifts between “resource convergence and divergence”, thereby identifying underlying relational mechanisms shaping the relationship between postponement implementation, sources of relational rents and sustainability-related outcomes.

In the second step, we juxtaposed emergent concepts with existing theoretical insights to move beyond descriptive accounts. Through iterative comparison and pattern matching (Yin, 2018), we identified recurring themes related to relational dynamics and the evolution of postponement across units of analysis. In the final step, second-order themes were synthesised into aggregate theoretical dimensions through iterative team discussions (Gioia et al., 2013). For instance, “resource reallocation” captured the activities resulting from postponement implementation; specifically, how the focal firm localises manufacturing and supply and how suppliers absorb and adapt their resources to accommodate these changes, as observed across the current and future UoAs. Similarly, “enhancing and preserving the environmental and economic outcomes” represented the dual performance outcomes of postponement, encompassing both economic and environmental benefits. Together, these dimensions make up the higher-order construct of “sustainability rents”, reflecting the joint environmental and economic value generated through interorganisational postponement.

#### 4. Case illustration: the implementation of interorganisational postponement

In this section, we illustrate the implementation of interorganisational postponement following the analytical framework presented in the methods section (i.e. context, the process of change and outcomes).

##### 4.1 Context

The focal firm produces a wide range of confectionery products in a few European Union countries, stores them in the UK and distributes them in the Irish market. To boost sales, particularly during peak seasons like Christmas, the firm introduced “shippers” – large cardboard boxes that both house the products and serve as attractive display units in stores (e.g. supermarkets and retail outlets). The shippers, designed primarily for marketing purposes, present significant challenges for the logistics team. Due to their bulkiness (i.e. the product

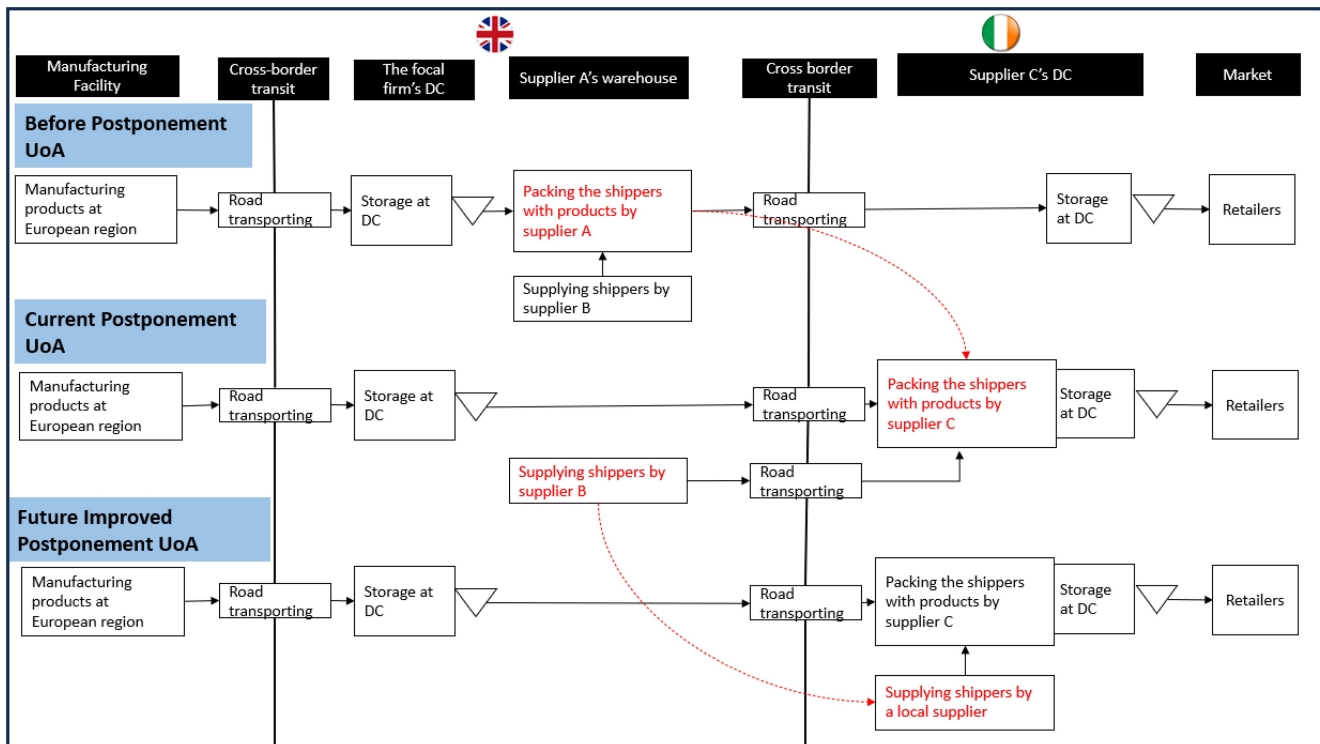
characteristic), the vehicle utilisation rate is usually low: “Ideally, we'd like to get as close as possible to 52 pallets. [However], shippers, through their nature, don't allow us to get anywhere near that” (FF-5). In addition, the shippers are prone to damage during transport, leading to waste and negatively impacting sales and customer service: “[Shippers] are not the most stable and there's a long way to travel. If you damage one or two shippers, it is a big deal because you cannot fulfil the customer orders” (FF-4). In addition, the packaging process of shippers also requires manual handling, which adds time and effort, causing delays and rework during distribution, particularly during peak seasons when flexibility and responsiveness are critical. Reflecting on these operational hurdles at the strategic level, the Head of the Distribution Network stressed the value of simplicity in factory operations: “Factories want simple things. Do not keep chopping and changing” (FF-1). Exporting to Ireland also incurred significant tariff and complexity, further heightened by Brexit: “When we sell it on a shipper, the customer buys it on different SKUs. [...] it is then incurring duty charges, which were quite significant to be fair” (FF-4).

##### 4.2 The process of change

The implementation process of interorganisational postponement across the three UoAs is summarised in Figure 3. Three of the firm's suppliers were involved (suppliers A, B and C), each with distinct responsibilities. The case was characterised by a shift from speculation (i.e. no postponement) in the past UoA to packaging postponement in the current UoA. This change involved delaying packaging activities and relocating them downstream internationally, closer to the Irish consumers. In the future UoA, the implementation is expected to involve localised purchasing of shipper packages. The change is divided into three SC operations: manufacturing, warehousing and transport (Table 3).

In the past UoA, the firm's logistics and operations ran on a speculative basis. Based on forecasts, manufacturing and packaging activities related to shippers were conducted in the UK. Supplier A assembled the shippers provided by Supplier B well before actual sales. Once the pallets were prepared at the UK distribution centre (DC), they were sent to Supplier A's warehouse, unpacked, repacked and transported to Ireland in single layers to avoid damage. This created double handling, high transport and yet still got damage losses: “There have been elements where shippers get damaged in transit over the water and so if it [happens], that means we're losing sales” (FF-2). Moreover, cross-border shipping shippers incur significant tariff charges.

To address the limitations of the speculative approach, the focal firm implemented a packaging postponement strategy in the current UoA by delaying shipper packaging and relocating the operation closer to customers, particularly in the Irish market. The firm redesigned its network to identify supplier resources aligned with the strategy while also considering cost advantages: “[We chose] a firm that already worked with us and already did shippers as well.” (FF-3) and “[...] look at what our contract rates are and obviously look for the best deal that we can get” (FF-4). Consequently, Supplier C assumed responsibility for packaging the shippers, while Supplier B continued manufacturing shipper packages in the UK and transporting them to the Irish DC, introducing additional

**Figure 3** SC mapping of the case study across the three UoAs

Source: Authors' own work

**Table 3** The process of change across the three considered UoAs

|                             | Past UoA                                                                                                                                                                                                                                  | Current UoA                                                                                                                                                | Future UoA                                                                                                                                                                                  |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Postponement implementation | Speculation                                                                                                                                                                                                                               | Packaging postponement                                                                                                                                     | Packaging postponement entailing localised supply                                                                                                                                           |
| What                        | No postponement                                                                                                                                                                                                                           | Packaging products into shippers                                                                                                                           | Packaging products into shippers, Sourcing shipper packages                                                                                                                                 |
| Where                       | All in the UK                                                                                                                                                                                                                             | In the Irish market (nearer to customers)                                                                                                                  | In the Irish market (nearer to customers)                                                                                                                                                   |
| Who                         | Suppliers A and B                                                                                                                                                                                                                         | Supplier B and C                                                                                                                                           | Supplier C                                                                                                                                                                                  |
| When                        | According to the forecast                                                                                                                                                                                                                 | Either according to the forecast or when customer orders are received                                                                                      | Either according to the forecast or when customer orders are received                                                                                                                       |
| Related activities          | Speculating                                                                                                                                                                                                                               | Localised manufacturing                                                                                                                                    | Localised manufacturing + localised supply                                                                                                                                                  |
| Manufacturing               | <ul style="list-style-type: none"> <li>Products are manufactured in the European region and moved to the UK</li> </ul>                                                                                                                    |                                                                                                                                                            |                                                                                                                                                                                             |
| Warehousing                 | <ul style="list-style-type: none"> <li>Products are packaged in full pallets at the main distribution centre located in the UK</li> <li>Full pallets are unpacked and re-packaged into full shippers at Supplier A's warehouse</li> </ul> | <ul style="list-style-type: none"> <li>Delaying packaging products into shippers and moving the activity to Supplier C's DC in the Irish market</li> </ul> | <ul style="list-style-type: none"> <li>Shipper packages will be purchased locally</li> <li>Only products will be bulk shipped from the UK to Supplier C's DC in the Irish market</li> </ul> |
| Transport                   | <ul style="list-style-type: none"> <li>The full shippers are shipped to Supplier C's DC in the Irish market</li> </ul>                                                                                                                    | <ul style="list-style-type: none"> <li>Products and shippers are separately bulk shipped from the UK to Supplier C's DC in the Irish market</li> </ul>     |                                                                                                                                                                                             |

**Note(s):** The arrows indicate that once the actions (i.e. the SC operations) so designated were implemented, they were maintained over the next UoA. The arrows also show that the focal firm's action repertoire expanded over time

**Source(s):** Authors' own work

international transport costs. With packaging postponed from the UK DC to the Irish DC, the focal firm gained greater flexibility in determining when to produce finished shippers – remaining forecast-driven where appropriate, but increasingly responsive to customer orders – while simplifying distribution planning and enabling fuller truckloads, shorter lead times and improved responsiveness: “[Because] we’re cutting out the haulage of moving the stock [...] we’ll reduce the lead time and we can move stock quite quickly [...] You’re allowing more flexibility.” (FF-3).

In the future UoA, the focal firm is exploring increased localisation in response to potential demand growth, introducing localised supply for shipper packages in the Irish market: “[The next plan] would be a local packaging supplier in Ireland that would supply the shipper rather than bringing it from the UK” (FF-1). Specifically, the plan involves identifying a local packaging supplier and maintaining collaboration with Supplier C for shipper co-packing. This is expected to cut cross-border transport costs for shipper packages, shorten lead times and improve responsiveness, while bulk products still come from the main UK DC.

#### 4.3 Outcomes

Consistent with the process-based single-case design, the outcome analysis focuses on the environmental and economic dimensions that became salient during postponement implementation and were traceable across interviews, operational documents, cost records and sustainability-related analyses. These dimensions include tariff charges, inventory-related inefficiencies, packaging and co-packing costs, handling costs, responsiveness, transport emissions, resource consumption and waste associated with product damage and material handling. The focal firm’s self-reported economic and environmental performance across the three UoAs is presented in Table 4.

In the past UoA, shippers effectively supported promotional efforts and market penetration, thus boosting sales. However, these gains came with notable trade-offs. Economically, the speculative approach generated tariff charges because products were transformed into full shippers before being exported to

Ireland. It also created inventory-related inefficiencies, as products had to be moved, unpacked, repacked and handled again before final delivery. These additional activities increased rework, handling requirements and operational complexity. The bulky nature of the full shippers also reduced vehicle utilisation, increasing transport costs and creating customer service risks when damaged shippers could not be used to fulfil orders. Environmentally, transporting pre-packed shipments increases the risk of product damage, emissions and material waste, thereby resulting in a sizable environmental footprint due to high resource consumption and pollution.

In the current UoA, postponement has improved several economic outcomes by delaying final product packaging into shippers and relocating this activity to Supplier C’s DC in Ireland. First, the focal firm eliminated tariff charges on exported transformed products because the final shipper configuration was completed closer to the Irish market. Second, bulk shipping improved vehicle utilisation and reduced transport costs. Third, the revised process reduced some inventory and handling inefficiencies by removing the need to send full pallets to Supplier A for unpacking and repacking in the UK before onward transport to Ireland. Fourth, postponement improved responsiveness because Supplier C could prepare shippers closer to customer demand, either according to forecasts or when orders were received. These gains, however, come with a clear trade-off between scale and responsiveness. By shifting packaging activities downstream, the focal firm forfeited packaging scale at the UK warehouse, thereby increasing per-unit packaging costs due to smaller batches and more frequent set-ups. In addition, shipping shippers’ packaging to Ireland added a transport leg and associated handling costs, partially offsetting the cost savings from bulk shipping. Environmentally, the shift has reduced truck usage, emissions and handling material waste, although cross-border transport of shipper packages to Ireland has introduced minor environmental drawbacks, slightly offsetting the positive impacts.

Looking ahead, the future UoA envisions enhanced localisation through the local supply of shipper packaging in Ireland. Economically, this is expected to preserve the tariff

**Table 4** The focal firm’s SC environmental and economic performances across three UoAs

| Outcomes                         | Past UoA                                                                                                                                                                                           | Current UoA                                                                                                                                                                                                                                                                                                                                              | Future UoA                                                                                                                                                 |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Economic performance</b>      | (–) incurred high tariff charges<br>(–) inefficiencies in inventory costs: by adding extra processing into the process (rework)<br>(–) inefficiencies in transport by reducing vehicle utilisation | (+) eliminate high tariff charges due to transforming products<br>(+) reduce transport costs from bulk shipping<br>(–) slightly increased per unit (co) packaging costs due to loss of economies of scale at Supplier B’s warehouse in the UK<br>(–) increase the international transport cost of shippers’ packages from Supplier B to the Irish market | (+) eliminate high tariff charges due to transforming products<br>(+) eliminate international transport of shippers to Supplier C’s DC in the Irish market |
| <b>Environmental performance</b> | (–) increase waste due to damage in transit of full shippers<br>(–) increase GHG emissions due to inefficiencies in transport                                                                      | (+) reduce waste associated with damage in transit of full shippers<br>(+) reduce transport emissions/consumption by reducing the number of trucks                                                                                                                                                                                                       | (+) further reduce transport emissions and associated waste from reducing international transport of shippers to supplier C’s DC in the Irish market       |

**Note(s):** The signs (+) and (–) indicate positive and negative effects on economic and environmental performances

**Source(s):** Authors’ own work

benefits already achieved in the current UoA while eliminating the remaining international movement of shipper packages from Supplier B to Supplier C. This would further reduce transport and handling costs, shorten lead-time exposure and improve responsiveness by placing packaging supply, co-packing and market demand within the same local operational context. Environmentally, sourcing closer to the Irish DC is expected to further reduce transport emissions and associated handling-related waste. By removing the need for cross-border shipping for shippers, the firm anticipates deeper economic and environmental benefits, supporting a more sustainable and cost-effective SC.

Across the three UoAs, joint environmental and economic gains were most evident where postponement removed operational inefficiencies that were common sources of both economic costs and environmental burdens, particularly repeated handling, low vehicle utilisation, product damage and unnecessary cross-border movements. However, increased co-packing costs and the continued international movement of shipper packages indicate that these gains were partial and that postponement could relocate rather than eliminate some burdens.

## 5. Findings: Sources of relational rents driving change in postponement implementation

In this section, we examine the sources of relational rents among the focal firm and its three suppliers through the theoretical lens of the RV, explaining how postponement translates into concrete activities and outcomes between the focal firm and its suppliers, thereby offering a deeper understanding of interorganisational postponement dynamics.

Considering the challenges associated with transporting bulky shippers, undertaking additional processing work and managing high tariff charges, suppliers played a central role in enabling the focal firm to implement postponement and achieve associated environmental and economic improvements. A structured overview of sources of relational rents across suppliers is provided in Supplementary Appendix 4. Below, we outline how complementary resources and capabilities, relation-specific assets, knowledge-sharing routines and effective governance supported interorganisational postponement.

Looking at complementary resources and capabilities, Supplier A has substantial experience in shipper handling, thanks to its long-standing UK operations, which feature dedicated co-packing areas and tightly integrated systems that enable agile responses to demand fluctuations. However, its location-specific capabilities became misaligned when the focal firm shifted packaging operations to Ireland, prompting a gradual transition away from Supplier A. By contrast, Supplier C initially lacked shipper expertise but owned proximity to the Irish market and compatible systems. As the postponement strategy evolved, Supplier C invested in new warehousing capacity and enhanced operational processes, signalling growing alignment with the focal firm's priorities. Alongside them, Supplier B kept a stable role by offering technical design capabilities, such as in-house artwork and cardboard engineering and demonstrated close alignment through shared environmental objectives. Although less affected by the

geographic shift, Supplier B's contribution illustrated the relevance of capability-based fit even amid changing operational contexts.

In terms of relation-specific assets, each supplier developed assets tailored to the focal firm, though the relatively modest volume of Irish shippers limited further investment. Supplier A had long-established facilities and dedicated teams for UK-based demand, supported by coordinated planning cycles: "We'll internally start to say we've got to spread this over two months [...] [they] take it away and start to look" (FF-3). Supplier B and Supplier C, more directly involved in Irish operations, committed resources despite the uncertain volume. Supplier B kept dedicated teams and rapid-response capabilities, while Supplier C began building relation-specific assets, including a local team and training programmes aligned with the focal firm's standards: "We tailored our training programs to align with [the focal firm] quality standards" (SC-1). However, the limited scale of postponed operations meant that such responsiveness often came at a cost, with resources underused during quieter periods.

Regarding knowledge-sharing routines, structured communication strengthened coordination among suppliers. Supplier A maintained daily and weekly planning interactions, ensuring alignment with production schedules. Supplier B also engaged in weekly calls, milestone tracking and regular performance reviews. Supplier C's communication was initially *ad hoc*, reflecting its limited early involvement, but later shifted to weekly coordination meetings as responsibilities expanded: "We now hold regular meetings [...] to promptly address any issues that arise" (SC-1). This evolution pinpointed a growing integration and the development of more robust planning routines.

Finally, Supplier A has a stable, longstanding partnership with the focal firm and is known for its extensive experience and dedicated facilities for shipper co-packing operations, which enabled agile responses to fluctuating demand. While they no longer handle Irish-market shippers, they remain a key partner for the focal firm, managing a significant share of the UK market. Regarding the interorganisational postponement, Suppliers B and C underscored their reliance on formalised procedures rather than informal coordination. Supplier B noted that they are "quite processed" and "don't deviate," emphasising disciplined adherence to established workflows (SB-1). Supplier C similarly highlighted structured processes, including the mandatory production approval form (PAF), which requires constructing and confirming the first display before full production. These governance practices ensured alignment, standardisation and clear expectations during the implementation of interorganisational postponement.

## 6. Discussion

In this section, we explain how the four sources of relational rents enable interorganisational postponement implementation and how they evolve as implementation unfolds. The first proposition in each pair clarifies the enabling role of a source of relational rents, while the second explains how that source is reshaped through an underlying relational mechanism as postponed activities, locations, partners and decision triggers change. Sections 6.1–6.4 also trace how these mechanisms

affect the operational drivers of economic costs and environmental burdens. We then integrate these pathways to explain how jointly environmental and economic gain arise and may be preserved as interorganisational postponement evolves.

### 6.1 Reconfiguring complementary resources through compatibility and convergence/divergence

The extant literature acknowledges that aligning resources and capabilities across firms can serve as a basis for synergy creation (Salvador *et al.*, 2007; Touboulic and Walker, 2015). Our findings elaborate on the postponement literature by emphasising the critical role of capability alignment in contexts where mismatches between operational systems and planning processes are more likely. Here, *resource compatibility* encompasses the ability to reconfigure not only processes and information systems but also the SC's physical architecture (Christopher and Holweg, 2017; Yang and Yang, 2010). This reconfiguration capability allowed the focal firm to rapidly evaluate its network and identify suppliers best suited to manage postponed activities in response to changes in locations and market requirements, thus enhancing responsiveness. These complementarities generate relational rents to the extent that they can be translated into compatibility across partners' planning and information systems, operational processes and physical SC architecture. This was evident when the focal firm assessed which activities to localise and where to locate them across geographically dispersed operations, while taking supplier interoperability into account. Accordingly, we propose the following:

*P1a.* Interorganisational postponement implementation success is more likely when complementary resources and capabilities are reconfigured to achieve cross-partner compatibility, thereby reducing mismatch-related disruptions as postponed activities and locations change.

However, the case shows that partner fit changes as postponed activities, supplier roles and geographical priorities evolve. Supplier A's co-packing capabilities, which are relevant in the earlier implementation, become less distinctive once Supplier C develops overlapping co-packing capabilities alongside its local storage role. At the same time, the focal firm's move towards localised postponement in the Irish market changes the geographical and operational requirements of supplier involvement, making Supplier C's resource base more aligned with the emerging postponement implementation. Thus, the transition from Supplier A to Supplier C does not simply reflect supplier replacement as it also reveals how complementary resources are continually reassessed as the postponement process unfolds. Theoretically, this pattern of *resource convergence and divergence* suggests that complementarity is not a fixed attribute or a stable match in interfirm relationships but rather a relational condition. As postponed activities and locations change, some resources become less distinctive because they overlap with other partners', while others become more valuable as they align with emerging operational requirements. Divergence, in this sense, is not necessarily problematic but supports changes induced by interorganisational postponement implementation. This helps

explain why suppliers may not remain equally valuable across different stages of postponement implementation and why mixed postponement outcomes may arise when resource fit is assessed only from a single-firm perspective (Forza *et al.*, 2008; Salvador *et al.*, 2007).

In our case, this evolving resource fit also shaped environmental and economic outcomes through the same operational changes. Moving co-packing to Supplier C improved vehicle utilisation and eliminated repeated handling, thereby reducing transport and handling costs, as well as emissions, damage and waste. Nevertheless, the loss of packaging scale and the continued international movement of shipper packages show that compatibility must be assessed against both the benefits and burdens created by a particular interorganisational configuration. We thus propose:

*P1b.* Through resource convergence and divergence, resource compatibility is continually reassessed and reconfigured as postponed activities, supplier roles and geographical priorities change, so that interorganisational postponement implementation can preserve partner fit and avoid resource redundancy over time.

### 6.2 Leveraging relation-specific assets through asset interconnectedness and asymmetric investment adaptation

The decision to invest in relation-specific assets is a major strategic issue in alliances because it is both a source of value creation and a barrier to exiting the relationship (Williamson, 1981). In this study, we corroborate the importance of tangible and intangible resources developed jointly with partners by showing how these assets shaped the interorganisational postponement implementation, enabling firms to accommodate postponement-related changes and thereby influencing both where and how value was created. Our findings emphasise strong *asset interconnectedness*, spanning both physical resources and knowledge. For example, suppliers' human resource commitments created access to reserved capacity; Suppliers B and C provided dedicated on-site support teams, enhancing localised responsiveness and directly contributing to the success of interorganisational postponement. Leveraging relation-specific assets thus enables interorganisational postponement by fostering shared infrastructure and know-how among SC partners, creating pathways for directional growth, whether through excess capacity (tangible resources) or relatedness (intangible resources) (Dyer *et al.*, 2018). Accordingly, we propose:

*P2a.* Interorganisational postponement implementation success is more likely when relation-specific assets are leveraged to create asset interconnectedness embedded in partner-specific physical and knowledge resources, thereby enabling coordinated execution of postponed activities across organisational boundaries.

However, the case also shows that relation-specific assets do not emerge through equal or immediate commitments across the SC. Instead, suppliers (and focal firms) adjust their asset commitments gradually as the value and feasibility of

postponed activities become clearer. In the current UoA, Suppliers B and C provide dedicated support, operational know-how and reserved capacity to enable localised postponement. However, the future scenario shows that deeper asset interconnectedness depends on whether partners perceive sufficient value in expanding their commitments, for example, through additional warehousing, tailored training and jointly developed work instructions. This indicates that relation-specific investments are shaped by uncertainty around demand volumes, task allocation and geographical priorities. This pattern suggests that relation-specific assets develop through ongoing investment adjustments, as early asymmetry does not necessarily produce immediate lock-in effects or bargaining-power shifts as suggested in parts of the RV literature (Dyer et al., 2018). Instead, partners adjust commitments as uncertainty around volumes, task allocation and operational value is gradually reduced. This highlights *asymmetric investment adaptation* as the process by which asset interconnectedness becomes more deeply embedded in interorganisational postponement, thereby affecting the environmental and economic consequences of postponement. Dedicated capacity, training and jointly developed work instructions can reduce errors, rework and material waste while supporting responsiveness. However, deeper localisation may also entail reserved or underused capacity and higher unit costs (Forza et al., 2008), suggesting that deeper commitments depend on whether partners perceive sufficient combined operational, economic and environmental value. We thus formulate the following proposition:

*P2b.* Through asymmetric investment adaptation, relation-specific asset commitments evolve from cautious, uneven commitments under uncertainty to deeper asset interconnectedness as the value of postponed activities becomes clearer, thereby sustaining collaboration and continuity in interorganisational postponement implementation.

### 6.3 Developing knowledge sharing routines through absorptive capacity and information processing capabilities

Knowledge-sharing routines encompass the ability to recognise, assimilate and apply critical information related to planning, operations and transport (Dyer et al., 2018; Patrucco et al., 2022). Implementing postponement across organisational boundaries, however, requires more than *ad hoc* exchanges of information; it necessitates a structured and deliberate approach to gathering, processing and disseminating knowledge, with organisational design and collaboration playing central roles (Trentin et al., 2012). Therefore, developing *absorptive capacity* is crucial for implementing postponement, since decision-making is often delayed until later stages of the SC (Qrunfleh and Tarafdar, 2013; Yang and Yang, 2010). In our study, suppliers' absorptive capacity enabled the focal firm to maintain flexibility in manufacturing and transporting products based on either forecasts or actual orders, depending on market conditions. This flexibility was possible because suppliers could rapidly absorb critical information, adjust their processes and execute postponed

activities with minimal delay. The development of knowledge-sharing routines highlights the important role of information flows in mitigating the complexity of interorganisational postponement. These routines provide the capacity to absorb, process and act on new information, thereby reducing the task uncertainty associated with postponement implementation (Trentin et al., 2012; Zinn, 2019). By enhancing the frequency, quality and intensity of knowledge exchange, firms promote organisational learning, strengthen relational ties and improve their ability to execute postponement strategies effectively. In this sense, knowledge-sharing routines provide the relational basis for partners to absorb and apply information, enabling them to adapt to short-term uncertainty while building long-term complementarities that sustain interorganisational collaboration. Accordingly, we propose:

*P3a.* Interorganisational postponement implementation success is more likely when knowledge-sharing routines build absorptive capacity across SC partners, enabling them to recognise, assimilate and apply critical information to adjust processes and execute postponed activities with minimal delay.

Moreover, our case shows that knowledge-sharing routines become effective when partners can process dispersed information and turn it into coordinated action. Supplier C does not simply receive information from the focal firm through repeated training, ongoing dialogue and operational feedback; it also builds expertise to refine its packing operations and execute localised postponed packaging with greater confidence. Similarly, Supplier B holds frequent coordination meetings and maintains shared visibility practices to align its packaging supply with the focal firm's evolving postponement requirements. These interactions extend beyond transactional information exchange, as they also involve performance monitoring and sustainability-related data that help partners interpret requirements consistently and respond in a synchronised manner. Theoretically, this pattern suggests that the value of knowledge-sharing routines extends beyond exchanging information to collectively processing it across organisational boundaries. In interorganisational postponement, information is distributed across SC partners, locations and operational stages, making shared interpretation essential for delayed decisions. Therefore, information-processing capabilities can explain how knowledge-sharing routines become actionable as demand and operational conditions shift. By collectively processing information on demand, transport, cost and sustainability, partners can coordinate packaging quantities, shipment consolidation and co-packing timing. This can reduce unnecessary transport, handling and waste while containing associated costs and also reveal where an apparent improvement in one activity creates an economic or environmental burden elsewhere in the SC. We thus propose:

*P3b.* Through information-processing capabilities, absorptive capacity is translated into shared interpretation and synchronised action, aligning SC partners' response to changing demand and operational conditions.

#### 6.4 Strengthening governance through relational capability and formalisation

Effective governance is primarily grounded in *relational capability*, which relies on trust and informal interactions and is essential for maintaining alignment and strategic SC relationships (Domfeh et al., 2025; Um and Han, 2021). Relational capability refers to firms' willingness and ability to collaborate, suggesting that those with prior partnership experience are not only more attractive as partners but also more likely to generate value through joint initiatives (Dyer and Singh, 1998). This was evident in our study during the early stages of interorganisational postponement implementation, when the focal firm needed to navigate local operational contexts and address relationship-specific changes. Also, early collaboration with Suppliers B and C was facilitated by relational capability, enabled by prior working experience and a willingness to solve problems jointly. Accordingly, we argue:

*P4a.* Interorganisational postponement implementation success is more likely when governance leverages relational capability to enable early collaboration under uncertainty, providing a foundation for coordination as partners begin to enact postponed activities across organisational boundaries.

Although a substantial body of SC literature supports the value of relational capability in managing complex interorganisational interactions (Cerruti et al., 2016; Phares and Richey, 2021; Touboulis and Walker, 2015), our findings suggest that trust-based, informal governance becomes insufficient as operational complexity increases. Early coordination with Suppliers B and C relies on trust, prior working experience and a shared willingness to solve problems. However, as the focal firm moves towards more localised and operationally embedded postponement, partners need clearer procedures, documented expectations and agreed quality standards. As the Senior Operations manager from Supplier C articulated, "This process [of formalising documentations] helps us align quality expectations right from the start, minimising errors and misunderstandings [...]. If there's a disagreement about the display's design or assembly, we can refer [...] to resolve the issue objectively and efficiently" (SC-2). This evidence shows that governance should evolve from informal coordination towards more explicit arrangements as postponed activities become more interdependent. Rather than signalling a decline in trust, formalisation provides the structure needed to sustain collaboration under increasing operational complexity. In addition, we argue that formalisation also makes the environmental and economic consequences of postponement more governable. Clear quality standards, documented procedures and agreed responsibilities help reduce assembly errors, rework and material waste, together with their associated costs. They may also make visible whether redistributed activities transfer costs or environmental burdens to another partner rather than removing them from the SC. Accordingly, we propose:

*P4b.* Through formalised governance, relational capability translates into explicit roles, documented procedures

and shared expectations, thereby stabilising interorganisational postponement implementation as operational complexity increases.

#### 6.5 From relational rents to sustainability rents through relationally enabled changes in interorganisational postponement

Our case illustrates that interorganisational postponement initiates a cumulative process in which the sources of relational rents are reworked as postponed activities become more locally embedded. This process moves from speculative planning to packaging postponement and then towards deeper manufacturing and supply localisation in the target market.

The process begins with a modest effort to reallocate resources, in which firms selectively integrate external capabilities to address SC complexity. In our case, deferring packaging enabled the focal firm to leverage Supplier C's local co-packing capacity, reducing rework and waste while improving responsiveness. At this early stage, informal governance and limited asset specificity are sufficient. Complementary resources and basic knowledge exchange were activated in response to product and process challenges. As postponement activities evolve beyond packaging due to changing country-specific tariffs and market requirements, the original alignment becomes insufficient. This prompts greater effort in resource reallocation, characterised by increasing localisation of the manufacturing and supply stages of the focal firm. At the same time, suppliers increase their investments; for example, Supplier C's investment in local warehousing, tailored training and joint work instructions reflected growing embeddedness in the focal firm's operations. These changes illustrate how resource convergence and divergence, asymmetric investment adaptation, information-processing capabilities and formalised governance adapt to shifting interorganisational postponement implementation and an increasingly clear understanding of "who knows what and where critical expertise resides" (Dyer and Singh, 1998). In later stages, as postponement extends from packaging to manufacturing and supply activities in the local market, the shift from *ad hoc* coordination to mutually reinforcing arrangements enabled relational rents to support and amplify environmental and economic outcomes. In sum, the joint gains did not result from delaying packaging alone, but they arose because localised co-packing removed operational inefficiencies that generated both economic costs and environmental burdens, particularly repeated handling, low vehicle utilisation, product damage and unnecessary cross-border movements.

As firms adjust the scope of interorganisational postponement across postponed activities (what), location (where) and SC partners (who) and flexibly respond to changes in demand triggering (when), new relational demands emerge that reshape resource interdependencies and deepen interfirm collaboration. Christopher and Holweg (2017) emphasise the need for structural flexibility to handle postponement-induced changes, with a high level of SC collaboration enabling this flexibility. From a processual perspective, changes in interorganisational postponement can catalyse resource reallocation and SC network restructuring, creating conditions

under which environmental and economic gains may be sustained over time. Therefore, we define *sustainability rents* as relationally generated value in which economic gains are accompanied by environmental improvements. Not every environmental improvement constitutes a sustainability rent and the term applies only when these combined outcomes depend on interfirm resources and relational mechanisms rather than on a focal firm's unilateral postponement decision. Also, such rents neither require that all environmental and economic outcomes improve simultaneously nor imply that benefits are distributed equally. We therefore propose:

- P5a.* Sustainability rents arise as a distinct form of relational rent when relationally enabled reconfigurations of interorganisational postponement reallocate resources to remove operational inefficiencies, thereby generating joint environmental and economic gains.
- P5b.* Sustainability rents are more likely to be preserved when changes in interorganisational postponement across postponed activities (what), location (where), SC partners (who) and demand triggering points (when) co-evolve with the four sources of relational rents through their underlying relational mechanisms, also managing the displacement of economic costs and environmental burdens.

Figure 4 brings together the discussion by positioning interorganisational postponement as a relational process of change rather than a discrete operational decision. The framework first shows how the four sources of relational rents support implementation through resource reallocation, as reflected in *P1a-P4a*. It then pinpoints the underlying mechanisms through which these sources develop during implementation, namely, resource convergence/divergence,

asymmetric investment adaptation, information-processing capabilities and formalised governance, as captured in *P1b-P4b*. Finally, the framework explains how relationally enabled changes in postponement arrangements can generate environmental and economic outcomes over time, thereby enhancing and preserving sustainability rents (*P5a-P5b*).

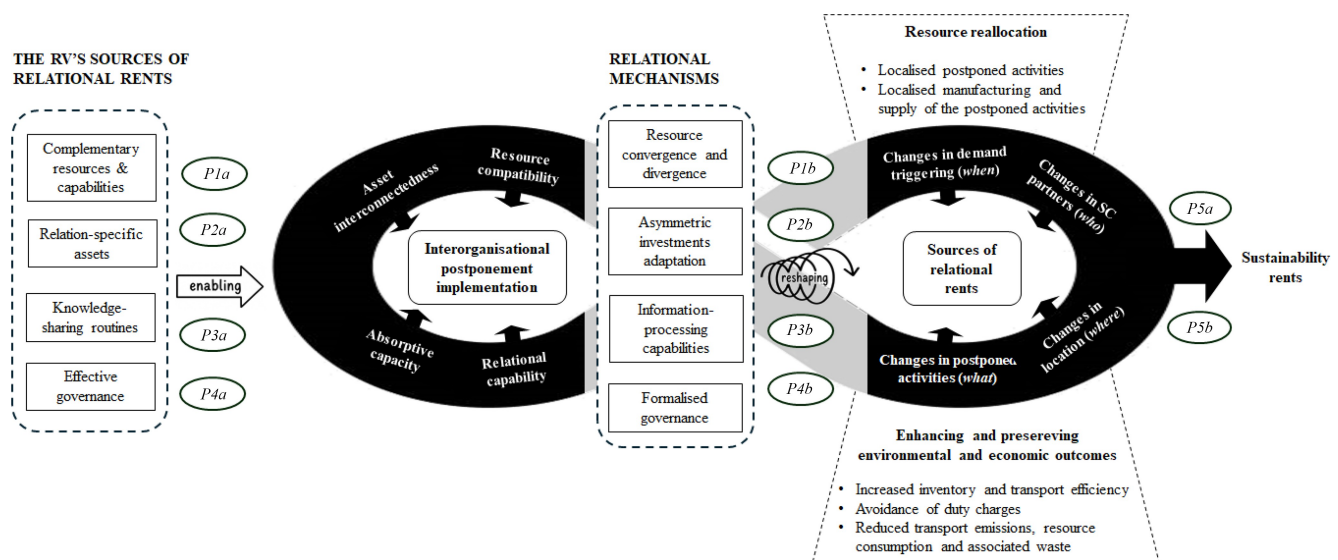
## 7. Conclusions

### 7.1 Research implications

The study thus contributes to the postponement literature in SC management by reframing interorganisational postponement as an implementation process enabled by the four sources of relational rents and developed through underlying relational mechanisms. By extending and contextualising the RV, we show that postponement outcomes cannot be understood solely as the result of delaying activities within a single firm's boundary. Instead, they require attention to how supplier relationships are configured, adapted and formalised over time as postponed activities move across organisational boundaries. The process-based research design enables us to observe how the four dimensions of postponement unfold alongside interfirm interactions, thereby clarifying how the sources of relational rents operate through mechanisms such as resource convergence and divergence, asymmetric investment adaptation, information-processing capabilities and formalised governance. Accordingly, we offer new insights into the evolving postponement concept (Boone et al., 2007; Prataiviera and Norrman, 2024) and contribute to the ongoing theoretical dialogue on relational rent generation in SC relationships (Dyer et al., 2018; Patrucco et al., 2022; Tate et al., 2022; Touboulis and Walker, 2015).

*P1a-P4a* specify how the four sources of relational rents translate into interorganisational postponement implementation success through its four structural dimensions (when, what, where and who). Complementary resources and capabilities

**Figure 4** A conceptual framework of interorganisational postponement from the perspective of the Relational View theory



**Note(s):** *P1a, P1b . . . and P5b* denote the corresponding propositions

**Source:** Authors' own work

enable implementation when they are reconfigured into resource compatibility, reducing mismatch-related disruptions as postponed activities and locations change (*P1a*). This compatibility is not static but is continually reassessed through resource convergence and divergence as supplier roles and geographical priorities evolve (*P1b*). Relation-specific assets enable postponement by fostering asset interconnectedness that supports coordinated execution across organisational boundaries (*P2a*), while asymmetric investment adaptation explains how asset commitments evolve from cautious, uneven commitments to deeper interconnectedness as the value of postponed activities becomes clearer (*P2b*). Knowledge-sharing routines enable postponement through absorptive capacity, which supports timely adjustment and execution (*P3a*), while information-processing capabilities translate this capacity into shared interpretation and synchronised action amid changing demand and operational conditions (*P3b*). Finally, governance enables early collaboration through relational capability (*P4a*), while formalised governance translates this capability into explicit roles, documented procedures and shared expectations as operational complexity increases (*P4b*). Taken together, these propositions clarify why postponement outcomes can appear mixed.

Forza *et al.*, 2008; Qrunfleh and Tarafdar, 2013; Salvador *et al.*, 2007): implementation success depends not only on the presence of sources of relational rents, but also on how these sources are activated, adapted and translated through relational mechanisms over time.

Furthermore, *P5a-P5b* advance the concept of sustainability rents as relationally generated value in which economic gains are accompanied by environmental improvements. Our contribution to the sustainability literature does not lie in showing that postponement can reduce emissions, waste or costs, as these possibilities have been identified in prior modelling and scenario-based research (see e.g. Budiman and Rau, 2019; Jabbarzadeh *et al.*, 2019; Simão *et al.*, 2016). Rather, we explain how such outcomes emerge through an interorganisational implementation process and why their alignment remains contingent on whether relational mechanisms remove common operational inefficiencies or merely relocate costs and environmental burdens across activities and partners. Our study explains how joint environmental and economic improvements can be pursued through resource reallocation and relational reconfiguration, while recognising that such alignment depends on evolving partner fit, credible asset commitments, collective information processing and governance discipline. In doing so, the study contributes to calls for more integrative theorising of sustainability in SCs (Tate *et al.*, 2022) by showing how environmental objectives can become embedded in ongoing interfirm value creation rather than treated as ancillary performance indicators.

## 7.2 Managerial implications

The study shows that interorganisational postponement should not be treated as a one-off decision by practitioners to delay activities, as firms need to redesign activities, supplier roles, information flows and governance arrangements as market conditions change. This approach requires careful examination of product characteristics, regulatory pressures, cross-border cost structures, demand uncertainty and the environmental consequences of current supply flows. Moreover, supplier selection needs to go beyond short-term cost comparisons to

consider relational fit. Managers should assess whether suppliers' resources align with the postponed activity and whether this alignment is likely to remain valuable as operations evolve. A supplier that works well in an early configuration may become less suitable when activities move closer to the market or when new local requirements emerge. In this sense, supplier fit should be reviewed throughout implementation, especially when firms relocate activities, change product flows or expand postponement from packaging to manufacturing or supply activities.

In addition, interorganisational postponement often requires dedicated capacity, training, local facilities or jointly developed work instructions. As suppliers may hesitate to invest heavily when future volumes, task responsibilities or expected returns remain uncertain, managers can build commitments gradually. Early stages might involve limited operational support, shared training or reserved capacity, while deeper commitments can follow once partners see clearer evidence of operational and financial value. The study also shows that information exchange alone is insufficient in the face of frequent environmental changes, such as late demand signals, local market requirements or changing transport conditions. Such changes necessitate more structured routines that help partners interpret and act on information in a coordinated way. Accordingly, regular planning meetings, supplier training and shared visibility systems can help translate dispersed information into timely operational decisions. In doing so, managers should also recognise that governance needs to evolve as postponement becomes more embedded. Early collaboration may rely on informal interactions based on trust and prior working experience. However, as volumes increase and activities become more interdependent, managers need clearer procedures and accountability mechanisms. By deliberately managing this transition, firms can reduce ambiguity and increase the likelihood that interorganisational postponement will generate both environmental and economic value.

## 7.3 Research limitations and future research recommendations

While this study offers valuable insights, its findings should be interpreted considering several limitations. First, although our single-case study design is well-suited to theory elaboration and supports analytical transferability rather than statistical generalisation, it limits the extent to which findings can be generalised to broader populations. Given that postponement strategies may vary across sectors and geographies and may not be suitable for all industries (e.g. chemical processing) or product types (e.g. low-variety, high-volume), future research should review and extend the proposed conceptual framework across other industries and countries. Second, while this study focuses on SC partners directly involved, a more comprehensive perspective, including upstream suppliers beyond tier 1, may be important for assessing sustainability impacts. For example, if Supplier B continues to source materials for shipper packaging from distant locations, the overall reduction in transport emissions may be limited, even if packaging is postponed downstream. Third, despite efforts to triangulate data, the study relies primarily on the focal firm's self-reported environmental and economic outcomes. This reliance introduces potential bias and reflects a common methodological limitation in firm-level strategy research.

Future studies could enhance robustness by incorporating objective performance measures and multiple data sources to validate the reported outcomes.

Moreover, an important theoretical limitation lies in the RV's assumption that collaboration leads to mutually beneficial outcomes. This perspective often underplays the paradoxical or conflicting goals that may emerge between partners, particularly relevant in the context of interorganisational postponement, where firms may simultaneously pursue cost-efficiency, responsiveness and sustainability. Specifically, the RV assumes a degree of symmetry and cooperation that may not reflect the realities of focal firm–supplier relationships, where power asymmetries, control and strategic dependence are frequently present (Yang *et al.*, 2007). For example, the RV emphasises value co-creation but does not explicitly theorise how value is contested or unequally distributed among actors. As such, our findings may not fully capture how firms navigate tensions or trade-offs during implementation. These limitations, therefore, point to the potential value of incorporating complementary theoretical perspectives, such as paradox theory or stakeholder theory, to better capture the dynamic and sometimes contradictory nature of interorganisational collaboration under postponement.

As products and SCs grow in complexity, environmental sustainability remains a pressing global concern. We collectively have responsibility for tackling this issue; acknowledging how businesses and SCs are organised determines how quickly and in what way the natural environment might change (Wieland, 2021). Using interorganisational postponement as an example, we aim to inspire researchers and practitioners to explore emerging opportunities and challenges in SC sustainability.

## Data availability

Due to the sensitive nature of the research, supporting data for this study are not publicly available. However, data are available from the corresponding author upon reasonable request.

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## Supplementary material

The supplementary material for this article can be found online.

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