Production Planning & Control
The Management of Operations

ISSN: 0953-7287 (Print) 1366-5871 (Online) Journal homepage: www.tandfonline.com/journals/tppc20

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To cite this article: Juan Sandoval, Ilias Krystallis, David Whitmore & Martina Huemann (05 Sep 2025): Managing strategic relationships in inter-organisational projects, Production Planning & Control, DOI: 10.1080/09537287.2025.2554161

To link to this article: https://doi.org/10.1080/09537287.2025.2554161

PRODUCTION PLANNING & CONTROL
https://doi.org/10.1080/09537287.2025.2554161

Managing strategic relationships in inter-organisational projects

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ABSTRACT

Project management literature and project-driven industries such as construction advocate for transforming relationships in construction projects from transactional to strategic. However, the dominance of Transaction Cost Economics (TCE) as the prevailing paradigm in relationship management in inter-organisational projects has confined most relationships to one-off projects, fostering short-termism and transactional interactions, rather than long-term partnerships built on trust. This short-term focus often leads to project underperformance, highlighting TCE's limitations in managing complex, long-term inter-organisational project relationships. To tackle this issue, this research explores and operationalizes a seven-dimensional framework that builds on Relational Exchange Theory (RET) to analyze how strategic relationships are manifested across four significant inter-organisational projects in the UK, considered exemplars of building strategic relationships. Our research contributes to the theoretical elaboration of RET by proposing several theoretical propositions and a provisional model for managing strategic relationships in inter-organisational projects.

ARTICLE HISTORY
Received 6 June 2025
Accepted 19 August 2025

KEYWORDS
Relationship management; Relational Exchange Theory; strategic relationships; construction

1. Introduction

For inter-organisation projects (IOP) such as large construction projects, effective relationships are essential for achieving strong project performance (Kim and Nguyen 2018; Zou et al. 2014). Effective relationships in IOP help allocate resources, share risks, drive innovation, and enhance performance, among other benefits (Derrouiche et al. 2010; Xu, Smyth, and Zerjav 2021). Relationship management in IOP is considered a 'soft management approach' that systematically manages intra- and inter-organisational project relationships through procedures and behavioural codes (Meng 2012; Smyth 2015).

Governments (often the 'client' of these projects) and industry actors (the suppliers of goods and services) are starting to note the importance of relationships in delivering IOP, as efforts are made to shift from transactional, competition-based procurement models, traditionally justified by value-for-money (VfM) metrics (Li, Maxwell, and Moehler 2025), to more strategic, collaborative, relationship-based approaches. For instance, initiatives in the UK such as the IPA (2016) Project Routemap, the Construction Playbook (HM Government 2017), and Project 13 (ICE 2017) have emphasized the use of relational aspects in project partner selection, the nature of the contracts and ways of working, among others. Regarding the latter, Project 13 has begun to foster strategic, long-term relationships by promoting shared knowledge and collaborative practices (ICG 2024; NIC 2024).

Building on relationship management literature, relationships can broadly be distinguished into transactional and strategic (Meng 2012; Smyth 2015). Related to IOP, transactional relationships, grounded in Transaction Cost Economics (TCE) theory, are characterized by fixed-term engagements focusing on contracts and financial mechanisms (Gustafsson et al. 2010; Williamson 2008). This model, prevalent in traditional project-driven industries such as construction, often results in higher transaction costs and stifles innovation due to its rigid structure (Eriksson et al. 2019; Um and Kim 2019). In contrast, strategic IOP relationships, influenced by Relational Exchange Theory (RET), emphasize long-term collaboration, trust, and shared objectives (Roehrich et al. 2020; Singh, Bhattacharya, and Nand 2025). Strategic relationships enhance IOP performance through better communication and collaboration (Bygballe and Swärd 2019; Revilla and Knoppen 2015), and foster industry-wide benefits such as skill development and productivity improvements (NIC 2024).

Despite the increasing emphasis on strategic relationships in large IOPs, with few exceptions (Meng 2012; Zou et al. 2014), there remains a lack of structured frameworks to assess and guide relationship management practices. Recent best practices acknowledge the importance of relational approaches (e.g. Project 13, Construction Playbook) and their benefits in enhancing collaboration, innovation, and efficiency (Li, Maxwell, and Moehler 2025). However, empirical

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Supplemental data for this article can be accessed online at https://doi.org/10.1080/09537287.2025.2554161.

studies investigating the management of strategic relationships in IOP are currently limited.

While TCE and RET provide theoretical foundations for understanding transactional and strategic relationships, a gap exists in applying structured, operationally focused models to real-world construction projects. The framework developed by Johnston and Staughton (2009) offers a comprehensive, practice-oriented approach for assessing strategic relationships but has not been extensively applied in project settings. Therefore, this study addresses this gap by extending the Johnston and Staughton (2009) framework to four IOPs in the construction industry. By doing so, three themes emerged, providing empirical insights into *developing*, *establishing*, and *measuring* effective strategic relationships in IOP, paving the way for broader investigations into how RET can enhance project performance.

The central research question is: *'How are strategic relationships managed in large inter-organisational projects?'*. Through a qualitative multiple-case study design, our research analyzed four large-scale infrastructure initiatives developed over the last 10 years, some of which are still in execution. Each case is from a different construction sector (water, nuclear, rail and roads), aiming to analyze the relationship management practices to generate non-biased insights to further the relevance of RET to project performance and offer recommendations for industry, government, and practitioners on effectively managing strategic relationships in IOP.

This research makes significant theoretical contributions. Specifically, it offers several key propositions by examining the management of strategic relationships across four IOPs. We find that strategic relationships in IOP are fostered predominantly by relational behaviours (Zhang, Wang, and Yao 2022) and complemented by contractual relationships, but not vice versa. Our findings thus advance RET and deepen our understanding of managing strategic relationships in IOP.

The paper is structured as follows: Section 2 unpacks the relationship management literature, the types of IOP relationships and associated theoretical lenses. Section 3 presents the theoretical framework of Johnston and Staughton (2009). This framework could be considered one of the few to help develop and assess strategic relationships. Section 4 presents the methodology and the selected case studies. Section 5 presents the multi-case study findings, while Section 6 discusses this study's findings and offers several propositions. Finally, in the concluding remarks, we consider our study's wider theoretical and managerial implications and open the floor to future research avenues.

2. Background

2.1. Relationship management in inter-organisational projects

2.1.1. Transactional relationships in IOP – the dominance of TCE

Smyth (2015, 2) defines relationship management as 'the systematic approach to managing intra-organisational and inter-organisational relationships articulated by procedures and behavioural codes'. In this study, we will use the term inter-organisational project relationship management, as its definition goes beyond terms such as supply chain. It embraces social capital in general by understanding how a range of relationships between people, between people and firms, and between firms as project actors operate and can be managed (Zou et al. 2014, 266). Specifically, our research focuses on inter-organisational project (IOP) relationships. These relationships cover the multitude of terms used to describe inter-organisational relationships across and within supply chains and project owners, including alliances, joint ventures, partnerships, networks and contracts (Johnston and Staughton 2009, 567).

IOP relationships can be distinguished between two types that are also widely accepted in the industry: transactional and strategic. The first type predominantly draws from the Transaction Costs Economics (TCE) theory (Gustafsson et al. 2010; Williamson 2008), and describes the traditional relationships in the construction sector that are broadly procured in line with the established business model of the industry. Transaction characteristics from TCE include asset specificity (e.g. traditional contracts based on discreteness and completeness), transaction frequency (e.g. tenders from project-to-project), and uncertainty (e.g. uncertainty of individuals' behaviour in adhering to contracts) (Shi et al. 2018; Wang, Tian, and Chen 2025). Traditional contracts based on this theory (e.g. lump sum) treat the identity of the parties as irrelevant and discourage third-party collaboration (Gil 2009), relying instead on contractual control that can create an adversarial and distrustful relationship between partners (Zhang, Wang, and Yao 2022).

This type of IOP relationship, characterized by short-term and arm's-length relationships, can increase transaction costs due to the relationship's lack of shared values and interests (Um and Kim 2019). Additionally, the model based on transactional relationships can result in detrimental factors, such as a lack of innovation, steep learning curves, and the slow adoption of new technology, which negatively impact the performance of IOP (Eriksson et al. 2019). In this transactional model, Smyth (2015, 65) suggests that 'the tasks come first, and the relationships follow'; a notion which aligns with the 'Western legal philosophy' that formal contracts are essential to establish and mediate firm relationships (Gil, Pinto, and Smyth 2011, 441). The ICE (2017, 11) suggested that the relationships created by this model are 'highly transactional, and the parties use contracts as the principal means of securing their objectives'.

2.1.2. Strategic relationships in IOP – the rise of RET

Instead, our study builds growing evidence to support the second type of IOP relationships. Research on strategic IOP relationships draws predominantly from the emerging Relational Exchange Theory (RET) supported by the use of relational contracting (Roehrich et al. 2020; Singh, Bhattacharya, and Nand 2025). By referring to relational contracting, the literature has referred to integrated or collaborative project delivery models, such as partnerships or alliances

(Arar, Poirier, and Staub-French 2025), where shared vision and trust are critical in reducing opportunistic or adversarial behaviours (Tang et al. 2024; Zhang, Wang, and Yao 2022), which can minimize the behavioural uncertainty and asset specificity (Galvin, Tywoniak, and Sutherland 2021; Kreye 2022; Shi et al. 2018). This can allow for long-term partnerships that go beyond single projects, which can reduce the transaction frequency and overall transaction costs (Wang, Tian, and Chen 2025).

Strategic IOP relationships are defined as long-term relationships focusing on trust, alignment, and risk-sharing, promoting a more flexible approach to dealing with change rather than strict control and planning (Eriksson et al. 2019; Gil 2009; Smyth 2015; Walker, Love, and Matthews 2024). Fostering strategic IOP relationships can produce mutual benefits and eventually deliver value from co-creation (Um and Kim 2019). Strategic IOP relationships are widely embraced for enhancing supply chain performance, owing to improved communication, cooperation, and coordination between organizations over time (Bygballe and Swärd 2019; Revilla and Knoppen 2015). Also, long-term relationships enable programmatic pipeline benefits, such as long-term confidence in developing new skills, better collaboration, collective learning, reduced investments in one-off costs, and incentivized productivity improvements across multiple sectors, including the infrastructure sector (Arar, Poirier, and Staub-French 2025; Archer and Ghasemzadeh 2004; Welling and Kamann 2001).

2.2. Research gap

The inherent temporality of projects adds a layer of complexity, influencing how relationships evolve and are sustained over time beyond individual projects (Brookes et al. 2017; Kreye 2022; Pryke 2020). Despite increasing recognition of the need for strategic, trust-based relationships, empirically-informed frameworks for managing such relationships in IOP remain scarce. Existing research has indirectly referred to notable IOP examples such as Heathrow Terminal 5 and Terminal 2 (Gil 2009; Zerjav, Edkins, and Davies 2018), and the 2012 London Olympics (Davies and Mackenzie 2014), which have been widely cited as exemplars of strategic relationship management in project practice. However, more than a decade has passed since these IOP were completed, raising questions about how to cultivate strong, sustainable IOP relationships in contemporary infrastructure.

Both scholars and project-driven industries, such as construction, advocate for transforming relationships in IOP from 'transactional' to 'strategic'. (ICE 2017; New Zealand Infrastructure Commission 2025; Smyth 2015). However, the dominance of TCE as the prevailing paradigm in relationship management has confined most relationships to individual projects, fostering short-termism and transactional interactions rather than long-term partnerships built on trust (Bygballe and Swärd 2019). This short-term focus often leads to project underperformance and inefficiencies, highlighting TCE's limitations in managing complex, long-term IOP. Furthermore, the logic of TCE dictates that frequent transactions increase control needs and discourage outsourcing under TCE. However, Bhattacharya, Singh, and Nand (2015) argued they can lower costs (due to economies of scale) and foster cooperation, supporting outsourcing, and even suggest that a high frequency of exchanges leads to opportunistic behaviour by the buyer, a notion the RET rejects.

This gap stresses the need for a paradigm shift: recognizing the limitations of TCE's transactional, cost-focused lens and embracing a more relational approach grounded in RET. RET emphasizes long-term collaboration, mutual value creation, and trust (Wu et al. 2020), aligning better with the complexities of modern construction projects. Therefore, a pressing need exists to explore how RET can provide a more effective theoretical foundation for managing strategic IOP relationships in construction.

3. Theoretical framework for managing strategic relationships in IOP

In our search for a comprehensive framework for managing strategic IOP relationships, we identified the Johnston and Staughton (2009) framework (Table 1). Before committing to this framework as the theoretical lens of this study, we have tested its robustness by identifying further research that highlights the key aspects of the framework (Annexe 2).

The framework identifies seven dimensions critical to managing strategic relationships. Extending this framework to IOP, our research determined that these dimensions can be grouped in three categories: the first two dimensions (D1, D2) are necessary for (I) relationship development, the following four dimensions (D3, D4, D5, D6) for (II) relationship establishment, and the final dimension (D7) for (III) relationship measurement. Additionally, the unit of analysis for dimensions is the individual (D4), the business (D1, D3), and in others, some specific processes/artefacts (D2, D5, D6, D7).

Below, we summarize recent IOP literature that has further developed each dimension.

Partner selection requires shifting from a price-based approach to one emphasizing technical competence and cultural fit to foster shared behaviours and strategic alignment (Gil 2009; Sabri, Micheli, and Cagno 2022). Moreover, research highlights the benefits of prior partnerships and the impact they can have on long-term relationships and transaction costs (Buvik and Rolfsen 2015; Chen et al. 2018; Järvenpää, Eriksson, and Larsson 2022; Zirar et al. 2025). Nonetheless, past practices may not apply to new, e.g. project alliances (Love, Mistry, and Davis 2010), and prior experience can even bias risk and opportunity assessments (Gustafsson et al. 2010).

Regarding the *nature of the contract*, integrated or collaborative project delivery models based on relational contracting in IOP have gained attention for their potential to enhance trust (Wu et al. 2020; Zhang, Wang, and Yao 2022), integration (Lahdenperä 2012), performance (Walker, Harley, and Mills 2015), innovation (Lloyd-Walker, Mills, and Walker 2014), reducing the transaction costs and adversarial behaviours between partners (Af Hällström, Bosch-Sijtsema, and

Table 1. Relationship dimensions (adapted from Johnston and Staughton (2009, 572)).

Dimension	Unit of analysis	Definition	Keywords
1. Partner Selection	Business	Who you choose to work with and why	Strategy, membership, procurement and/or equity
2. Nature of contract	Processes/artefacts	Impact of the contract on the relationship and vice versa	Contractual relations and/or incentives.
3. Understanding each other	Business	Understanding each other's expectations and perceptions	Mutual objectives, alignment, dependence, perceived benefits, and/or partner expectations.
4. Interpersonal relationships	Individual	One-on-one relationships at work and socially	Commitment, communication, flexible attitude, soft skills, personal chemistry, persuasion, attitude and professionalism, and/or working style
5. Ways of working	Processes/artefacts	How teams work together	Project processes, coordination, integration, trust and/or culture
6. Dealing with problems	Processes/artefacts	Dealing with and learning from problems	Conflict resolution, dispute handling, joint problem solving, problem-solving attitude, learning from problems, innovation and/or appraisal processes
7. Performance management	Processes/artefacts	Using measures to drive action and improvement	Benchmarks, tools, feedback and/or agreed performance objectives

Poblete 2025; Arar, Poirier, and Staub-French 2025). However, relational contracting is not universally effective (Lahdenperä 2019; Rosander 2022) and contracts and incentives alone do not ensure strong IOP relationships (Suprapto et al. 2016). There is limited (but growing) research on integrating relational and traditional contracts, as well as the use of incentives for better project outcomes (Gil, Pinto, and Smyth 2011).

Understanding each other in IOP requires participating organizations to align mutual objectives, synchronize decisions, enhance shared benefits, and strengthen long-term collaboration (Smyth 2015). This is critical, as unclear organizational objectives and lack of alignment are significant barriers to cross-functional collaboration (Yin et al. 2023). However, challenges in aligning expectations arise due to varying relationships, potential complacency, and evolving collaboration dynamics (Gil 2009; Huang, Han, and Macbeth 2020). Managers/leaders must monitor and adapt partnerships to resolve conflicts and opportunistic behaviours (Xu et al. 2024).

Inter-personal relationships in IOP require individuals to adapt to the project culture through collaboration, flexible approach and relational values (Reed and Loosemore 2012). Leadership is crucial for fostering strong inter-personal relationships (Smyth 2015; Zheng et al. 2024) and for fostering cooperative behaviours (Wang, Tian, and Chen 2025). Individuals without leadership capabilities cannot develop and maintain critical relationships alone, and can directly impact project performance (Abson, Schofield, and Kennell 2024; Zheng et al. 2024).

A growing body of literature on ways of working explores how integrated project teams, processes, and mechanisms support collaboration. Integrated teams rely on trust, open communication, and a teamwork culture for effective collaboration (Franz et al. 2017). Integration requires understanding daily dynamics rather than static mechanisms (Hietajärvi, Aaltonen, and Haapasalo 2017). Various integration strategies (e.g. co-location and client secondments) enhance relational behaviours by facilitating knowledge-sharing and a unified culture across integrated teams (Gil 2009; Pauna et al. 2021). Trust is vital (Wu et al. 2020; Zhang, Wang, and Yao 2022), however, it requires alignment across individual, project, and firm levels (Xu, Smyth, and Zerjav 2021).

Dealing with problems in IOP benefits from joint problem-solving, speed, flexibility, and inter-organizational learning (Carmeli, Levi, and Peccei 2021; Walker, Love, and Matthews 2024). In an innovation-resistant industry (Rose and Manley 2014), relational contracting enables a blame-free environment that encourages learning and innovation to avoid problems (Lloyd-Walker, Mills, and Walker 2014). Joint decision-making and leadership were vital in fostering an innovation-driven problem-solving culture (Potter and Paulraj 2020; Revilla and Knoppen 2015). Early contractor involvement (ECI) is insufficient for radical innovations and avoiding coordination problems (Eriksson et al. 2019), especially in the face of public-sector pressures for VfM. (Bemelmans, Voordijk, and Vos 2012; Miller et al. 2009).

Regarding *performance management* in IOP, few studies have tried to measure relationships and give feedback on their performance. Meng (2012) analyzed relationship management's role in project performance across the UK construction industry by benchmarking eight relationship indicators (e.g. mutual objectives and trust). Smyth and Edkins (2007) surveyed the components and characteristics of trust across PPP projects in the UK. Derrouiche et al. (2010) measured relationship aspects between partners and then between the client and partners.

4. Methodology

This qualitative study employs a multiple-case design (Yin 2017) involving four UK IOPs to contribute to theory elaboration. Theory elaboration allows the joint investigation of 'general theory' (Ketokivi and Choi 2014), such as the operationalization of the Johnston and Staughton (2009) framework, as well as the 'context', a project-driven industry such as the infrastructure sector in the UK. This is particularly useful when few examples of strategic relationships in IOP literature exist. Also, theory from multiple cases typically 'yields a more robust, generalizable, and testable theory than single-case research' (Eisenhardt and Graebner 2007, 27).

Table 2. Overview of selected cases.

Programme	East-West Rail Phase 2 (EWR2)	Programme Project Partners (PPP)	Anglian Water @One Alliance 2015-2030 (@1A)	Smart Motorways Programme (SMP)
Sector	Rail	Nuclear (Decommissioning)	Water	Road
Time	2020-2024	2019-2039	2015-2030	2020-2030
Cost	£1Bn	£7Bn	£1.2Bn	£4.5Bn
Partners	4	6	8	9
	Network Rail (client), Laing O'Rourke (LOR), VolkerRail, and Atkins	Sellafield Ltd. (client), KBR, Altrad Babcock, Morgan Sindall Infrastructure and Amentum (previously Jacobs)	Anglian Water Ltd. (client), Balfour Beatty plc, Barhale Ltd, Binnies, Mott MacDonald Bentley | MMB, MWH Treatment, Skanska and Sweco.	National Highways, Fluor, WSP, Jacobs, Balfour Beatty, Costain and the BAM Morgan Sindall joint venture
Description	Re-establish a rail link between Oxford and Cambridge. The programme consists of 80 km of new track and drainage, two new stations, five new overbridges, 22 refurbished bridges, five bridges with new decks, 10 new footbridges, a rebuild of the Bletchley Flyover, one box culvert underpass, 130 km of new fencing, and the closure of level Crossings.	+15 projects across 20 years, of which five are active: The Sellafield Product and Residue Store Retreatment Plant (SRP), the Replacement Analytical Project (RAP), Box Encapsulation Plant Product Store (BEPPS2), the Lightly Shielded Store (LSS1) and the Site Ion Exchange Effluent Plant (SIXEP) Continuity Plant (SCP) (Sellafield Ltd. 2022).	Scheduled to design and build some 800 projects. These include water treatment works, water recycling treatment centres, pumping stations, river water abstraction systems and renewable energy facilities. These projects are part of Anglian Water's AMP7 framework.	There will be three work packages. Each package will contain one to five road schemes or specific resource requirements for the delivery programme.
Previous IOP*	Stafford Area Improvement Programme (SAIP).	Silos Direct Encapsulation Plant (SDP)	Anglian Water @One Alliance 2004-2015 (first part)	Collaborative Delivery Framework programme (CDF)

*See also Annexe 2 for more information.

4.1. Overview of selected cases

Table 2 presents an overview of the selected cases. These case studies were carefully selected based on the following two criteria to ensure their relevance and credibility. First, they were recommended by industry experts interviewed as part of a broader research initiative, which involved building a database of over +45 interviewees. Second, they were recognized as 'exemplars' within their respective industries, reinforcing their significance. For instance, their selection was supported by their inclusion in key industry reports (e.g. ICG 2024; ICE 2017), which cemented their selection as strong representatives in their field. Having these cases on board was critical, as few examples of successful projects/programmes have been examined in the last few years, and these programmes are pioneering in the way UK programmes are being delivered.

The East-West Rail Phase 2 project (EWR2) was the upgrade and reinstatement of the Bicester–Bletchley–Bedford and the Aylesbury-Claydon Junction railway lines to facilitate the operation of new passenger services between Oxford, Milton Keynes, Bedford, and Aylesbury (Network Rail 2018).[1] EWR2 is featured in the Annual Report of Major Projects (IPA 2023, 54), where interviewees highlighted it as a successful example of relationship development. From an IOP perspective, it is essential to note that this project was the second to be delivered by the same coalition of organizations, as the EWR2 alliance was *'established in 2015, following the successful completion of the Staffordshire Area Improvements Programme'* (SAIP), a £250 million project to improve the West Coast Main Line (EWR Alliance 2021, 3). The same coalition is now tendering for future projects. The EWR2-SAIP will be considered together for this research.

The Programme Project Partners (PPP) is a major nuclear programme focused on developing complex infrastructure for storing and treating nuclear materials. This programme aims to facilitate decommissioning the Sellafield site, representing one of Western Europe's highest hazard nuclear sites (Sellafield Ltd. 2023b). PPP has two projects that passed from 'yellow' to 'green' in the Annual Report of Major Projects (IPA 2023, 49). As shown in the Findings section, PPP involves some key learnings and reflections on procurement from a previously cancelled project, the £1.7Bn Silos Direct Encapsulation Plant (SDP).

The Anglian Water @One Alliance (@1 A) is one of the UK's most significant water capital delivery programmes. It has delivered more than 800 projects between 2015 and 2024 (Anglian Water Services Ltd. 2024). As one executive suggested (C-1), @1 A *'was set up in 2005 to fundamentally address a major issue … a mixed performance from their existing supply chain … '*. The @1 A has *'consistently outperformed Anglian Water's business plan targets, significantly increasing the length of supplier alliance contracts'* (Mills et al. 2020, 245). All this accumulated experience has been the input for the coming work package, the AMP9, which will be delivered from 2025 to 2030 (Anglian Water Services Ltd. 2023a).

Finally, the Smart Motorways Programme (SMP) is one of the most significant road investments for maintaining, operating, and modernizing the strategic road network across England (Highways England 2018). Before, SMP was delivered under the Collaborative Delivery Framework (CDF), a 26-partner programme that delivered £5 billion of investment in

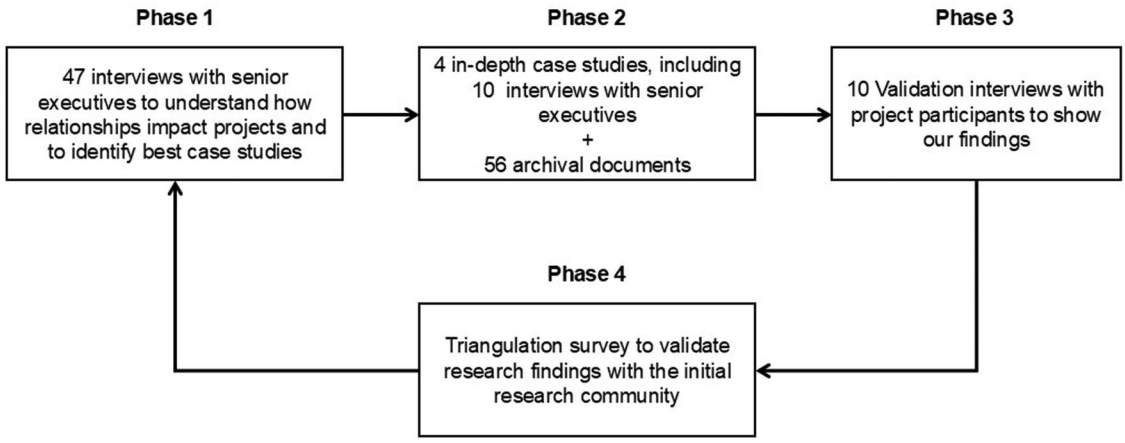

Figure 1. Data collection phases.

England's motorways and major roads between 2014 and 2019 (Highways Agency 2014). As one executive suggested, '*National Highways have learnt the successes and the failures of [CDF] and the Alliance is born out of that*' (MPA 2024). Even though the Government cancelled the delivery of new Smart Motorways due to financial constraints and a lack of political confidence (National Highways 2025), the case was selected because interviewees and industry reports (e.g. Project13 2024), highlighted SMP as having good relationship practices, outstanding performance, and lessons that can be taken for other IOP.

4.2. Data collection

A rich dataset was assembled combining data from primary and secondary sources (Annexe 1. Figure 1 summarizes the data collection phases. In Phase 1, we collected primary data from 47 infrastructure project executives in the UK to understand how relationships impact IOP and test the applicability of the Johnston and Staughton (2009) framework. Each interview lasted between 60 and 90 minutes. Table 3 summarizes the interview participants' profiles, and Annexe 4 presents the semi-structured interview questions. Practitioners were from different infrastructure sectors and roles, such as client-side, development, and consultancy.

In Phase 2, we conducted a second round of 10 in-depth interviews by interviewing IOP executives (Annexe 5a) from the best practice cases identified in Phase 1 and described in Section 4.1. Because these executives were part of the project board and were involved in key project decisions, getting access to them was challenging (due to their busy schedules), but crucial for obtaining a more complete picture. To provide the necessary context and validation, findings were supported by secondary data through 56 archival documents, such as project reports, progress, videos, news, and other relevant sources (Annexe 6).

In Phase 3, to assess the credibility of our findings, we used the 'member-checking approach' (Creswell and Poth 2016, 208). Follow-up meetings with the interviewees of Phase 2 were scheduled to 'give participants an opportunity to consider whether any of the experiences or perceptions of others also applied to them' (Harvey 2015, 30). Annexe 5b presents the additional changes or clarifications suggested by participants to strengthen the robustness of our findings further.

Table 3. Number of interviews and professional background.

Professional background	Number
Government Independent Bodies	3
Infrastructure owner-operator	17
Main Contractor	11
Professional Development	5
Professional Associations	4
Consulting (e.g. engineering, architecture, advisory companies).	7
Total	47

Finally, in Phase 4, a summary report of our interim findings was prepared and shared with the initial interview cohort of Phase 1 in the form of an online survey (Annexe 7). During this phase, the research team strived to validate our findings by actively seeking opposing viewpoints (objectivism), while also allowing for personal reflection and the incorporation of new data based on individual experiences (constructivism) (Birt et al. 2016). At this stage, 65% of participants suggested that all findings reflect their experiences in 'a great deal', and 35% indicated that all findings resonate 'a lot' with their experience.

4.3. Data analysis

Theoretical thematic analysis was employed to analyze the data (Boyatzis 1998), guided by the Johnston and Staughton (2009) framework. This deductive approach allowed the study to systematically investigate theory within the real-world context of UK infrastructure IOP. Table 4 illustrates the data structure model. The following steps were employed:

1. Familiarization with the data: All interview transcripts and archival documents were thoroughly reviewed. The research team immersed themselves in the data to gain an initial sense of meaning and relevance, with

particular attention to constructs (the seven dimensions) within the theoretical framework.

2. Generating initial codes: A coding scheme (1st order codes in Table 4) was developed for each case based on the framework's seven dimensions and the study's research question. Transcripts from Phases 1 and 2 were coded accordingly, using qualitative data analysis software NVivo. The team tracked freely interview passages across the seven dimensions of the theoretical framework developed by Johnston and Staughton.
3. Searching for themes: Codes were grouped or merged into broader themes (2nd order codes presented as subthemes in Table 4) aligned with theoretical constructs. Patterns were compared within and across the four case studies to identify commonalities and contextual variations.
4. Reviewing and refining themes: Thematic coherence was tested through an iterative review process. Member checking (Phase 3) allowed participants to validate and refine theme definitions. These contributions led to enhanced clarity and strengthened the credibility of the findings.
5. Defining and naming themes: The Final themes were clearly defined in terms of the theoretical lens of RET and the empirical data. This step ensured that the themes captured the nuanced nature of strategic IOP relationships. The three emergent themes (Relationship development, Relationship establishment, and Relationship measurements) are shown in Table 4 are the result of this step.
6. Producing the report: Themes were written up with illustrative quotes (Section 5) and triangulated with secondary sources to ensure depth and robustness. Throughout the analysis, the research team maintained a reflexive stance, balancing objectivist validation (e.g. triangulation, member checking) with constructivist interpretation (e.g. incorporating participants' lived experiences).

5. Findings

By applying the Johnston and Staughton (2009) framework to IOPs, three themes emerged. The three themes build on all seven dimensions of the theoretical framework. The four cases demonstrated similarities and differences regarding managing strategic IOP relationships. Table 5 summarizes the evidence of each dimension for each case. We noted that the interviewees referred to the second theme most often.

5.1. Relationship development

5.1.1. Partner selection

This dimension refers to how the case study client organizations selected their partners. Our coding structure is divided into *a relational approach to procurement*, *long-term relationship vision*, and *'pre-formed' vs. 'post-formed' coalitions*.

The four projects sought to establish a *relational approach to procurement*. For instance, in PPP, a *'behavioural model, which comprised 30% of the overall scoring for the procurement'* was developed (IPA 2021a, 32). This model measured 25 desired behavioural characteristics in five clusters (e.g. leadership and people). In @1 A, *'partners were selected against their capability to deliver outcomes'* (Mosey 2021, 199), and through a Request for Information process, they tested capabilities and behaviours through a questionnaire to demonstrate the bidder is *'the proper organisation with the right people'* (C-1). SMP allocated 70% of the assessment on quality and not price, as well as the use of *'structured interviews'* (D-1) to test for *'cultural and business alignment to Alliance objectives'* (Highways England 2018a, 30). In EWR2, there was a two-stage evaluation with the first being behavioural (A-1).

Equally, PPP, @1 A and SMP formally implemented *a long-term relationship vision* with the client (20, 15 and 10 years, respectively) by tendering the whole programme to avoid individual project tenders, establish long-term relationships with partners to allow partners to *'invest with confidence'* in the supply chain (Sellafield Ltd. 2022, 21), and *'facilitate a long-term focus on the delivery of outcomes and realisation benefits'* (IPA 2021a, 42). As D-1 mentioned, *'[If] you've got a project that's a couple of years long, you're not going to get the behavioural change quickly enough, and partners won't invest in the necessary change within their business to make it happen'*. EWR2 established an 'informal' long-term vision, as there were tenders between SAIP and EWR2. As A-2 suggested, *'Nearly 15 years later, that team is still together. They've delivered SAIP, EWR2, and now they're moving to the next … the relationship's longevity* probably makes *the biggest difference'*.

Another key finding was how each project coalition was formed. For instance, in the EWR2, the client required the bidders to bid as a *'pre-formed'* alliance. In this case, the alliance's experience in the SAIP project was critical, as A-2 mentioned: *'I would say the difference was that the EWR2 team took the learning from SAIP into day one … Instead of having to create something, it started with the SAIP'*. However, this was not a 'one-size-fits-all' strategy. In PPP, B-2 shared that *'the "pre-formed" [coalition] from the [SDP project] formed a strong culture that clashed with Sellafield culture'*, and for this reason, they opted for a 'post-formed' coalition *'to get the very best from industry in each capability'*. In SMP, participants bid individually, and Highways England evaluated *'each potential Alliance Partner separately in order to select best-for-task'* (Highways England 2018a, 28).

5.1.2. Nature of the contract

This dimension concerns the contract's impact on a new or ongoing relationship. *The use* of *relational contracts* and *collective ownership and risk management through shared* incentives expands this dimension further.

Participants highlighted using *relational contracts* instead of traditional cost/scope-based contracts. Contracts were made to enhance collaboration and establish and improve the partners' relationships. Additionally, contracts vary depending on each project. For instance, in the EWR2, an *'alliancing contract'* (Network Rail 2015) or *'Project Alliance Agreement'* (PAA) (A-1), was used between all partners. In

Table 4. Data coding structure.

Themes *(2nd order codes)*	1st Order Codes	Representative Quotes
Theme I: Relationship Development		
1. Partner Selection	1.1. A relational approach to procurement	"The first stage of ITT is very much behaviour-based. There is no mention of commercial at all. 'What skills can you bring, and how will you work collaboratively as an alliance?' They bring specialist behaviour consultants to assess each alliance working in different scenarios. After that process, it goes into the next process, which will have more scope, programming, and cost. [Client] is putting a big emphasis on wanting a team that not only shows it can work together effectively, but it's the right team that they can integrate into" (A-1)
	1.2. A long-term relationship vision	"I would say that the project-to-project thing didn't work for us. We're recreating the wheel every time with our supply chain partners. We weren't learning; we weren't changing. We're making the same mistakes, which is part of the business case for what we do this way. Having different teams go from project-to-project, everybody's a shiny Unicorn. Nobody wants to learn from the people who came before them. Everybody thinks what they're going to do is different and special" (B-3).
	1.3. 'pre-formed' vs. 'post-formed' coalitions.	"I think it's horses for courses … There are very few that can point to the fact that they have operated under a single contract regime … As a 7-party set-up, that doesn't exist … I imagine two or three where they are more likely to have operated elsewhere in some joint arrangement. I'm more comfortable for them to bring their ready-made relationships to the table … in our case, we've got seven contractual parties alongside ourselves. That's a big ask" (C-1)
2. Nature of the contract	2.1. The use of relational contracts	"It was an open book … It took a while. It wasn't day one, but [Contractor 1] was sharing their cost base with [Contractor 2], who was sharing it with [Contractor 3] … if [Contractor 1] was doing something 30% more efficiently than [Contractor 2], we wanted to understand that and then deploy the cost down way across all of the other partners. So, we needed to understand how they were operating, not because we were being nosy but genuinely because we wanted to understand if there were differences and how we could leverage the value where one partner was doing it better than another partner" (D-1)
	2.2. Collective ownership through shared incentives	"We introduced at that time a moderation process that I still run now, where annually when we're looking at the returns to partners on an annual basis, we can moderate those dividends in effect based on who's won some of that competition in providing the best people, the best technologies, the best innovation, the best ideas, the best solutions to create some of the greater good" (C-1).
Theme II: Relationship Establishment		
3. Understanding each other	3.1. Time and effort are required for relationship development	"Before starting the contract, you get people together and start looking at the relationships, culture, and vision of what they will achieve rather than going into: 'You've won the contract and will start in six months. On the first day, you've 61 deliverables'. I've spent money because I would get it back by bringing the leadership together, learning how they will work together, bonding and forming relationships, aligning all their outcomes, and setting the project up for success before you do anything" (B-1).
	3.2. Use of integrated decision-making teams	"With the outcomes from [Client] and the outcomes from the partners, we created blended alliance outcomes that define success for all. Therefore, if we achieve that, we will achieve success for all the partners … you were not conversing about whether it was right for [Client] or right for the partners … It was all based on those six collectively defining success for all partners, including [Client]" (D-1)
4. Interpersonal relationships	4.1. Team player selection based on relational behaviours	"Once they physically turned up for work on the Alliance, everybody had an induction, which was the usual. But then, we did a one-to-one interview with a member of the ALT. It was "we, as the Alliance, will promise to provide you … ". On the back of it, it's like a declaration and says what we expect from you. After some of those one-to-one interviews, it was, "Unfortunately, you do not have the behavioural views we share on this alliance. So, I'm sorry you're not for this project"" (A-1).
	4.2. Talent development based on relational behaviours	"You've got a large programme and can grow and learn. You're allowed to invest in talent and bring in graduates. You can set up a project Academy [51 courses]. You can become more inclusive and diverse because you're over there for a period of time … You can employ more directly … In [IOP], 95% of their people are employed by partners … There are 196 suppliers under the [IOP]. It's phenomenal. Some of them have 18-year relationships as well, which is fantastic" (B-1).
5. Ways of working	5.1. A one-team culture based on collaborative behaviours	"Having the relationship, openness, transparency, and trust built up between all parties, which is a product of the relationships but fundamental to call it out because trust percolates all the way through the organization from top to bottom and back up again. You will not see the efforts and energies in driving the performance and the delivery by trying to look over everyone else's shoulder … So, lack of trust at all levels has to be recognized, as you've got to overcome that and find ways of making performance visible and transparent … the focus and attention is on working collectively" (C-1).
	5.2. The use of integration mechanisms	"I don't decide as the client who delivers the work for me. I issue work to the [IOP] and the [IOP] partners as a collective and integrated 'best athlete' for task

(*continued*)

Table 4. Continued.

Themes (2nd order codes)	1st Order Codes	Representative Quotes
		teams, decide who the principal designer is, decide who the principal contractor is, decide which partners will be involved in any individual project and tell me. Then, I effectively distribute the liability shares accordingly with those without self-nominations" (C-1).
6. Dealing with problems	6.1. Problem-solving attitude	"Our scope of work was significantly affected … You could have had the partners going or saying, 'We want to renegotiate the contract, we want to renegotiate our fee; it's a different scope'. But in reality, they said, 'No, we're committed to this. This is just another bump in the road; we're committed to this partnership now and will make it work" (D-1).
	6.2. Innovation as the main approach to problem-solving.	"I'm prepared to be open to innovation, and you try your new things. Big contractor, come and do me first. Then when you've given me the benefit, you could go to other sectors and say, 'We've done it here at [Client] in a relationship-based contract where we are incentivized to bring best practice in a model where we all work together to get the right results', that's a pretty low-risk proposition to come and try new things. I get the advantage of all that innovation first" (C-1)
Theme III: Relationship Measurement		
7. Performance management	7.1. Lack of standard relationship measurements	"When we got to [IOP], we introduced the CCT. We do the survey, you do the Marks, and you score it … you get the whole set of results. Then, we had a facilitated workshop … We get the results. We work on what we think of the three or four biggest issues we know from an informed perspective, and then start moving around to generate the improvement plan. Then, we have feedback on each team's actions. We can measure our relationship and strengthen the relationship both as an organization and within engineering and the client" (A-3).
	7.2. The use of personal judgement.	"I like to think 99% of people who come to work come to do a really good job. I've found that people may not do a good job because they've had more career experience. I'm quite willing to work with those people. Like I named 3 or 4, two have become the best people ever. Because you've invested time, they're quite willing to go much further for you because you've put faith in them. They've got to have the capacity, capability, and technical ability to do that job, which is why you make that assessment" (B-1).

@1 A, a *'heavily amended NEC3'* (C-1) was signed between the client and each partner. In PPP, they used individual NEC4s with each partner, which *'have been amended to introduce outcome-based incentives'* (NEC 2019), which allows building *'a better, healthier relationship than a contract by penalty'* (B-1). In SMP, partners are in a single multiparty '*alliance contract*' (NEC4) (Highways England 2018a, 32), that has been *'modified to suit the client needs'* (D-2).

In all four cases, *collective ownership and risk management were achieved through shared incentives*. In PPP, the client paid for the *'project costs, including overheads, plus a nominal amount of profit for every hour that they book',* and what was at *'risk'* was the collective partners' *'profits'* (B-3), which were in the 'Aligned Incentive Fund' (Sellafield Ltd. 2022, 5). In the case of the EWR2, *'all costs each individual company expends on the project are reimbursed',* and the client owned 50% of the pain/gain, and the remaining 50% was categorized among all participants equally, irrespective of the cost incurred (A-1). In SMP, National Highways paid the partners' project *'defined'* costs, and incentive fees were paid to partners *'if they collectively achieved key Alliance goals'* (Highways England 2018b, 4). Regarding @1 A, the client assumed the risk and *'increased the behavioural focus on further levels of out-performance - and removed any incentives around turnover, hours charged, fee recovery and perceived partner self-interest'* (ICG 2014, 32).

5.2. Relationship establishment

5.2.1. Understanding each other

This dimension emphasizes how partners understand each other's expectations and perceptions. The four case studies highlighted the need for transparency and honesty in partners' relationships to align objectives and expectations. Findings in this dimension are categorized into *time and effort are required for relationship development* and *the use of integrated decision-making teams*.

Participants highlighted that *time and effort are required for relationship development*. In @1 A, it took 18 months to get '*off the ground and where it needs to be … you can't skip that 'forming' stage out'* (C-3). In EWR2, as A-2 suggested, there is *'no "forming" and no relationship building'* due to the continuity of the SAIP team. Nonetheless, A-1 indicated that before EWR2, the partners went *'through a series of workshops'* with coaching to look at *'who's the best person for each of these roles'* (A-1). SMP *'spent a long time and a lot of energy in getting to know each other and building those networks of relationships'* (MPA 2024), and *'It took three years to break even to beat their traditional ways of working'* (D-2). PPP took *'several months [12 months] of collaboration'* to establish the 'Major Project Baseline' (IPA 2021b, 34). Additionally, B-3 shared that they have *'consciously invested money, time, blood, sweat, and tears'* in how they will work as a team.

Another finding was *the use of integrated decision-making teams*. In PPP, a *'senior leadership team'* was created initially (IPA 2021a, 32), and then they appointed *'a representative who speaks for the alliance independently'* if those decisions affect its parent organization (B-1). In @1 A, an *'alliance board'* and an *'alliance Senior Leadership team'* were created (IPA 2021a, 42). With each partner having a position, this Alliance board meets monthly to *'oversee the overarching performance and governance for the alliance'* (C-1). In EWR2, an

Table 5. Overview of case study findings.

Dimensions	East-West Rail Phase 2 (EWR2)	Programme Project Partners (PPP)	Anglian Water @One Alliance (@1OA)	Smart Motorways Programme (SMP)
Category I: Relationship Development				
• *Partner selection*	• 'Pre-formed' alliances were required. • 2-round ITT with a collaborative approach to the 2nd phase. • The losing second-round bidders' costs were covered. • 30% score allocated to relationships.	• Partners were selected individually. • Partners are selected based on their behavioural culture (30%) and capability. • Assessment workshops with collaborative facilitators evaluated bidders' 25 behavioural characteristics in five clusters (e.g. outcome focus).	• Partners were selected individually. • Workshops based on how partners will work to 'outperform'. • Partners were selected based on their readiness and commercial models to deliver larger-scale programmes/projects	• Partners were selected individually. • Partners selection is based on quality (70%) and commercial (30%). • Structured interviews of the tenderers' leadership, delivery, and supplier teams to test for cultural and business alignment with Alliance objectives.
• *Nature of the contract*	• An alliancing contract. • Equal revenue share irrespective of the cost incurred ([Contractor 1] would incur the most cost and least profit in the early part of the project, whilst [Contractor 2] incurred the least cost. Towards the end, it was the opposite) • A pain/gain share line was agreed upon, which included behaviours as a payment metric. • No claims allowed.	• Outcome-based amended NEC4 Engineering and Construction Contract (ECC) Option E and let services contracts with the NEC4 Professional Service Contract (PSC) Option E. • An 'Aligned incentive agreement' agreed with partners (check every three years). • The contract has no liquidated damages or penalty clauses.	• Heavily amended NEC3 with each partner to allow flexibility over time. • Provide professional service fees to main contractors before delivery. • Incentives based on 'outperforming' all partners. The client was able to mediate partners' profits due to different alliance measurements.	• NEC4 Alliance contract with all partners. • Project (defined) costs are paid regardless of performance. • Tendered fees are divided into base, alliance goals, and alliance budget fees.
Category II: Relationship Establishment				
• *Understanding each other*	• The 'Alliance Leadership Team' comprises senior representatives of each partner for decision-making and management of expectations. • Alliance directors were changed according to the project stage and needs. • 'Alliance principles' (8): Best for project, win-win, unanimous decisions, innovation, VfM, best person for the job, stakeholder expectations and sustainability and safety underpin every decision.	• A 'leadership team' comprises senior representatives of each partner for decision-making and management of expectations. • 'Strategic deliverables' (8): knowingly safe, project excellence, value return, flourishing people, an industry leader, sustainable business, best workplace, happy stakeholders, sustainable business. • Training and scenario planning around the incentive agreement to align partners.	• The 'Alliance Board' and 'Alliance Leadership Team' are comprised of senior representatives of each partner for decision-making and expectation management. • Commercial workshops to align the supply chain. • Incentives were given to integration leaders due to their position in the supply chain and the time of involvement, where they were best placed to double-check everything.	• The 'Alliance Leadership Team' comprises senior representatives of each partner for decision-making and management of expectations. • Alliance outcomes (6): Home safe and well, enhanced environments, production excellence, confident customers, inspiring workplaces and enriched communities.
• *Interpersonal relationships*	• People selected on competence plus relational behaviours. • Regular 1-2-1 meetings with leaders and peer-to-peer review from different sections. • Regular behavioural training and feedback. • Job rotation to gain experience and to share knowledge. • Magazines with updates and H&S/innovation/ supply chain integration examples.	• Graduates, apprenticeships and academia (51 courses) in partnership with the University of Cumbria. • Use of 'Line Manager training'. • Use of 'Inclusive Leadership Behavioural training'. • The partners directly employ 90% of the people. • A dedicated team to support incorporating behavioural competencies in attraction, recruitment, onboarding and performance. • Use of collaborative working workshops.	• Partnership with four colleges (e.g. West Anglia-2 courses). • Use of 'Behavioural change training sessions'. • Leadership programme. • Construction training school • Magazines with updates and H&S/innovation/ supply chain integration examples. • 'Integrated Global Design Team' to share expertise and support teams and individuals. • 'Employee Assistant Programme' (EAP) for emotional and practical support.	• Alliance learning management system "ROU7E" • "Journey to Wellbeing" programme. • The Alliance set up a "level steering group" comprising a representative of each partner organization to support the well-being of the Alliance (partnered with MAXIMUS). • Partnership with the University of Cambridge and Leeds University Business School • "Our People strategy" is based on accountable leadership, diverse and inclusive culture, great

(*continued*)

Table 5. Continued.

Dimensions	East-West Rail Phase 2 (EWR2)	Programme Project Partners (PPP)	Anglian Water @One Alliance (@1OA)	Smart Motorways Programme (SMP)
				employee experience, etc. • "Leading women's networks" and initiatives such as our "Returners programme" to attract new people.
• *Way of working*	• Co-location. • Single alliance culture (partner companies employed members, but members shared a single culture). • Relationship and Innovation Managers appointed. • Integrated teams (people from each partner in the team).	• Co-location • Client people are seconded in partner teams. • Relationship Management system 44001 • Strong culture underpinned by collaborative behaviours (based on the PPP Cultural Maturity Assessment Results). • 'PPP high performing teams'. Focused on bringing all behavioural aspects together in team environments.	• Co-location • Secondments among organizations. • Use of integration leaders. • Workshops focusing on integration, behavioural development, trust and information flow. • Use the High-Performing Team (HPT) framework. This framework provides a toolset for describing high performance and undertaking collective self-assessments.	• Co-location • Single alliance identity (partner companies employed members, but members shared a single culture). • Establishing " the production hub" to set up standard processes, digital platforms, and systems. • Established the "Business integration framework" (BIF), which blends various data sources across organizations.
• *Dealing with problems*	• Key staff swapped in and out during the project to improve culture and performance. • Mini-task teams with participants from each partner were formed to solve issues. • Innovation workshops were vital to succeeding in overcoming challenges. • People with wrong behaviours were switched out.	• Changed leadership team in the middle of the project to improve culture and performance. • People with skills not aligned to the job role were moved to other positions, and people with wrong behaviours were switched out. • 'Integrated Research Teams' to support different innovation programmes	• Special focus on innovation to overcome or avoid challenges (e.g. Heigham Scheme and Cambridge Water Recycling Centre). • Commitment to prioritizing collective success over individual gains. • 'Exercise Perfect Storm'–a team exercise where they experienced a theoretical emergency that tested their problem-solving skills.	• A 'can-do attitude to overcome challenges. • Innovations like the 'Rapid Engineering Model' were developed to reduce design options times. • The alliance has faced challenges by focusing on the integrated team, declaring and celebrating successes and rewarding and recognizing achievements.
Category III: Relationship Measurement				
Performance management	• Use of the 'constructive collaborator tool'. • Employee surveys included satisfaction with relationships. • Appointment of a consultant to help develop the behavioural assessment criteria tool and process.	• 'Annual cultural maturity assessment tool' based on 10 assessment pillars (e.g. leadership). • A 6-monthly staff pulse check to monitor whether the work on PPP's culture is helping make it a safe, fulfilling and collaborative environment.	• Use of the 'constructive collaborator tool'. • 'Love to Listen' employee survey (89% of employees see customer focus, effective line management, flexibility, and people support).	• Use of the "Alliance engagement survey" • Include EDI, employment, development, SMEs and environmental factors in the performance indicators.

'*Alliance leadership team*' (EWR Alliance 21, 11) was created for decision-making with the '*empowerment from their parent organisations*' (A-1). In SMP, an '*Alliance Leadership team*' was established early with representatives of each partner (ICG 2024, 16) for decision-making and to develop the outcomes objectives.

5.2.2. Interpersonal relationships

This dimension highlights the relationship between key players in one-on-one situations. All participants highlighted trust, openness, and transparency as fundamental to their partner relationships. Nonetheless, to get to those values, findings in this dimension can be further elaborated into *team player selection* and *talent development based on behaviours.*

Projects spent considerable effort in *team player selection based on relational behaviours*. In PPP, a dedicated team '*supports the incorporation of behavioural competencies in the attraction, recruitment, onboarding and performance management of new staff*' (IPA 2021c, 23). Furthermore, new talent was critical: 37 apprentices and 20 graduates in PPP (Sellafield Ltd. 2024a, 32), and 63 and 9, respectively, in @1 A (Anglian Water Services Ltd. 2023b, 55), for 2023. In @1 A, the Construction Training School '*recruits candidates based*

on behaviours rather than technical ability' (Anglian Water Services Ltd. 2023a, 28). Also, an executive of PPP (B-1) expressed that '*there is no one-size bet*' and shared an anecdote about changing senior leaders to another position because their skills and chemistry were not the best for the role. In SMP, because people's '*capability and competency*' were high in the selection process, '*it was more about whether they had a vision for how they were going to drive the alliance forward and whether they had the right behaviours to operate in this way*' (D-1). Furthermore, an EWR2 executive (A-1) shared the recruitment process of the alliance, which was supported by the recruitment policy (EWR 2024).

Regarding *talent development based on behaviours*, in the EWR2, there were '*peer-to-peer reviews*', a '*weekly magazine*' with innovations and lessons learned, and '*job rotations*' to gain more exposure between sections (EWR Alliance 2020). The other case studies with a more extended timeline highlighted the long duration of the programme, allowing the supply chain to invest in behavioural development, such as the '*line manager training*' in PPP (Sellafield Ltd. 2022, 70), the '*leadership programme*' in @1 A (Anglian Water Services Ltd. 2017, 61), or the '*Alliance Learning Management System*' in SMP (Project13 2024). Additionally, some have developed partnerships with academic institutions, such as Anglian Water with the College of West Anglia (Anglian Water Services Ltd. 2017, 60), the Leeds University Business School with Highways England (National Highways 2023, 70), or the University of Cumbria and Sellafield (Sellafield Ltd. 2024b, 10).

5.2.3. Ways of working

This dimension deals with relationships at an organizational level (e.g. processes and cultural alignment). Its findings are further elaborated into *a one-team culture based on collaborative behaviours* and *the use of integration mechanisms.*

Participants highlighted the need to create a *one-team culture based on collaborative behaviours*. In EWR2, even though partners employed the participants, it was '*invisible*' to see for which company, as they were working as '*one team*' in the alliance by sharing values, and decisions were taken on a '*best-for-project basis*' (EWR Alliance 2020). In the SMP, it was necessary to create a '*neutral ground*' where there is no one '*dominant party*' (MPA 2024), but still complementary to the organizations involved, as people need to '*navigate across boundaries between their own companies and the Alliance*' (Project13 2024). In PPP, B-2 shared an anecdote about culture improvement: They arranged a '*speed-dating day*' where people were categorized into teams with activities, and a quiz with a prize at the end was done. He concluded, '*The amount of e-mail traffic went down, and people were getting up and walking down the corridor and talking to each other … those simple techniques lubricated a more collaborative and better communication inside the project*'.

At the same time, all the case studies shared that they proactively encouraged *the use of integration mechanisms* and shared multiple strategies to achieve this purpose. Co-location was common in all four cases. In EWR2, the alliance contract allowed for an '*integrated approach*' by having the different '*expertise [of each partner] in one team*' (EWR Alliance 2020). In PPP, Sellafield Ltd seconded several people into the partners, called the '*fifth partner*' (B-3), to share '*business expertise*' in the '*joint project teams*' (NAO 2024, 25). Simultaneously, using ECI workshops has promoted '*collaborative working and setting the foundations for improved predictability of cost and schedule outturn*' (Sellafield Ltd. 2022, 25). In SMP, '*The Production Hub*' (Highways England 2018a, 16), was established to standardize activities '*that would traditionally have happened at every project level and bringing it into the centre to drive efficiency and consistency*' (D-1). In @1 A, they formed '*High Performing Teams*', which are integrated teams emphasizing '*aspects that underpin high performance, such as clarity of common goals, clarity of roles and accountabilities and stakeholder management*' (ICG 2014, 14). At the same time, partners can organize the project delivery team to guarantee the '*best-for-task approach*' (Mosey 2021, 119).

5.2.4. Dealing with problems

This dimension examines concerns about how the two parties (or more) create agreed-upon processes for dealing with issues and how relationships are held together when things go wrong. Findings in this dimension can be categorized into *Problem-solving attitude* and *Innovation as the main approach to problem-solving.*

It was identified that projects have a *problem-solving attitude* instead of relying on contract provisions to address remedies to issues. EWR2 initially struggled to deliver positive performance levels, as seen in 2021 in the IPA (2025, 28) Annual Report. The Alliance Director from SAIP was brought in, and additional training and learning were instigated. The original SAIP ethos was gradually adopted, and the performance gains were realized (A-3). In PPP, the leadership team 'has been refreshed' (Sellafield Ltd. 2024a, 17). B-1 and B-3 shared more details about the leadership change for the project's cultural benefits and alignment. In @1 A, the '*Delivery Leadership Team*' meets regularly to ensure a '*pan-alliance approach to solving problems and managing risks and opportunities*' (Anglian Water Services Ltd. 2020, 26). Simultaneously, C-1 shared a story about redirecting top-performing players to support struggling sections because they '*had better overall results by going and helping them rather than spending extra money in an area already delivering high efficiency*'. In SMP, the work bank was '*unstable and changeable*', which affected the programme scope, but the team created '*a can-do rather than a can-not attitude*' (MPA 2024). This was reflected in an anecdote of D-1, where the alliance came together, pooling top talent from all partner companies to turn things around.

Furthermore, the *innovation* process was key to avoiding problems or facing challenges without requiring a contract change. EWR2 '*tackled innovation on the project from the starting point*' (A-2), as it was one of the alliance's values (EWR Alliance 2021, 3). For instance, workshops with the supply chain were done, where suppliers proposed solutions to

different challenges and presented them to the *'EWR's Innovation Team'* (EWR 2023, 1). In Sellafield Ltd., *'integrated Research Teams'* have been established (Sellafield Ltd. 2023a, 6), to support different programmes, such as the PPP *'Concrete Innovation Working Group'* (Sellafield Ltd. 2022, 67). Other '*supply chain innovations*' were identified due to ECI workshops (See example in Sellafield Ltd. 2022, 40). In SMP, a *'huge offline team'* was developed to coordinate the different innovations across the organization (D-1). Additionally, various initiatives were established, such as the *'innovation and modernisation fund'* (National Highways 2023, 75), and the *'Rapid Engineering Model in construction and handover'* to prevent or mitigate problems before they occur (Highways England 2020, 60). In @1 A, multiple innovations were introduced due to the early collaboration of all partners, such as the *'50% reduction in embodied carbon'* (ICG 2014, 13), among others.

5.3. Relationship measurement

5.3.1. Performance management

This dimension debates how measurement can help the feedback process and improve relationships and project performance. Findings in this dimension can be categorized into a *lack of standard relationship measurements* and the *use of personal judgement*.

Across all cases, we found a *lack of standard relationship measurements* regarding how relationships were measured. However, their efforts were valuable; each case demonstrated a different approach in this dimension. For example, PPP uses an *'annual cultural maturity assessment tool'* based on 10 pillars, including assessing *'leadership'* and *'values and shared beliefs'* across different roles, companies, and projects (Sellafield Ltd. 2024a, 16), and appointed *'collaboration facilitators'* (e.g. Deloitte and JCPii) in workshops (Sellafield Ltd. 2022, 77). @1 A used the annual *'Love to Listen'* employee survey within the Alliance, where *'people remain highly engaged, have a strong connection to our purpose and feel well supported'* (Anglian Water Services Ltd. 2023b, 57). In SMP, *'an annual survey and then a poll survey every three months, and that effectively came up with a Net Promoter score'* within the alliance, which was checked within the ALT to suggest possible changes (D-1). Similarly, EWR2 used the '*constructive collaboration tool*' (CCT) (A-3), which was also used in @A1 (Anglian Water Services Ltd. 2018, 16).

Even though the four cases did not develop relationship measurements, changes in other dimensions were made based on the leaders' *personal judgement*, experience or gut feeling by considering available evidence. Apart from the anecdotes shared in *interpersonal relationships* and *ways of working*, C-1 in @1 A exemplifies this, as he suggested when he goes *'to a partner who knocked it out of the park… There is no question; everyone gets it'*. In EWR2, when A-2 told an anecdote about the leadership change due to the various phases, he concluded his anecdote by sharing, *'Why are we doing this change?… But it turned out to be absolutely the right decision at the time'*. In SMP, D-2 reflected on measuring relationships and shared that he has not *'thought about that because it's almost that subliminal consciousness that you go into an organisation… they can obey in that way… the optics have already predetermined how that person will behave'* and for this reason, is not common to measure relationships.

6. Discussion

6.1. Theoretical contributions

This section addresses our research question by discussing the results in the context of the broader literature on IOP relationship management. Building on our findings, this section presents several propositions, framed within the three identified themes, that contribute to the theorization of managing strategic relationships in IOP. This work advances the theoretical understanding of strategic relationships through the lens of RET by examining four cases regarded as best practices in IOP, specifically in the construction sector. This was achieved by applying the Johnston and Staughton (2009) framework to IOPs. Thus, we provide detailed insights into how successful strategic relationships can be formed in IOP.

6.1.1. Relationship development

Related to relationship development, the findings of our four cases suggested that the tide is changing. To foster a mindset of strategic relationships, our findings showed that three selected cases (PPP, @1 A, and SMP) tendered the entire programme, thereby avoiding the project-to-project procurement process and related transaction (frequency) costs. EWR2 can be considered an 'informal' programme, as even though SAIP and EWR2 were tendered separately, they were awarded to the same alliance, giving continuity to the coalition, as participants highlighted. Their requirement for 'preformed' alliances also mitigated some issues encountered on other one-off projects. Traditionally, the construction industry is characterized by a lack of long-term relationships between supplier and client, which shows that it is not common to tender multiple projects in a single bid (Archer and Ghasemzadeh 2004). This has increased the transaction costs in the industry (Af Hällström, Bosch-Sijtsema, and Poblete 2025; Um and Kim 2019).

Furthermore, in the selected case studies, except for EWR2, it was ensured that the same partners moved from project-to-project, enhancing participants' performance, trust, and learning curve over time. Welling and Kamann (2001) showed that when the same partners work together across a series of projects, the development of strategic IOP relationships is more likely than when they team up with different partners on each project, reducing behavioural uncertainty (Kreye 2022). These strategic IOP relationships are further strengthened when consistent partnership selection is maintained across multiple projects, rather than changing partners for each one (Archer and Ghasemzadeh 2004).

We found that it is challenging to establish high-performing relationships in the public sector. Even though the UK government has recently enacted a new Procurement Act allowing greater selection criteria flexibility (NAO 2023),

VfM based on price has traditionally been overemphasized in public tenders when selecting partners (Love, Mistry, and Davis 2010; Sabri, Micheli, and Cagno 2022). Instead of selecting partners based on commercial variables, all four cases emphasized relationships and relational aspects in the tender. For instance, 30% of the evaluation was based on relational behaviours in the EWR2; PPP ran different behavioural workshops with bidders to assess different factors (e.g. leadership); SMP used 70% of the assessment based on quality and not price and used behavioural interviews; and in the @1 A, the evaluation was based on how bidders can outperform. All of this has improved the relationships with the partners, evidenced by good performance indicators and other benefits mentioned before. This allows us to formulate the following propositions:

Proposition 1a. *Tendering a programme of inter-organisational projects is more likely to develop stronger strategic relationships than tendering each project separately.*

Proposition 1b. *Tender evaluations that include not only VfM or time/cost/quality assessments but also relational behaviours will likely develop stronger strategic relationships, leading to better project outcomes.*

6.1.2. Relationship establishment

Related to relationship establishment, the construction industry has emphasized using relational contracting, such as partnering/alliances, to influence better performance that reduces transaction costs related to asset specificity through relational attitudes, flexibility, teamwork quality and early integration among participants (Eriksson et al. 2019; Shi et al. 2018; Suprapto et al. 2016; Walker, Harley, and Mills 2015; Zhang, Wang, and Yao 2022). However, relational contracting is critical for establishing strategic relationships but it requires more than that to develop them (Gil, Pinto, and Smyth 2011; Laan et al. 2012; Lahdenperä 2019; Rosander 2022). Paraphrasing Gil (2009, 166), contracts can 'drive behaviours' but 'don't deliver projects'.

Building on this argument, the four case studies highlighted that even though having a contract based on relationships (e.g. 'pure alliance', individual or joint NEC4 Alliance, etc) was critical, establishing strategic IOP relationships was one of the toughest challenges. Whilst the four cases highlighted the difficulty of establishing IOP strategic relationships, they also showed their rewarding nature and different ways of achieving this. This was evident across the findings in four key dimensions (D3–D6):

- **D3** - Understanding each other: Participants noted the difficulty in preserving the strategic intent of IOP relationships during delivery, primarily as objectives and expectations evolved and multiple organizations were involved.
- **D4** - Interpersonal relationships: At all organizational levels, relational skills are critical, and organizations invest time, effort, and dedication in talent selection and development to establish the right behaviours that fit the desired culture.
- **D5** - Ways of working: Success was strongly linked to adaptive ways of working, a one-team culture, use of integrated teams and mechanisms, and a cultural shift towards establishing strategic relationships.
- **D6** - Dealing with problems: Project teams relied on a problem-solving attitude, using collaborative mechanisms such as mini-task groups, negotiation processes, and innovation to tackle problems instead of strictly following contractual clauses.

Furthermore, the four cases suggested that previous experiences and relationships from earlier projects were critical to establishing strategic IOP relationships. For instance, in EWR2, the previous alliance (SAIP) was crucial in establishing integrative work practices, trust, a common philosophy, and open communication (D5). Moreover, the lessons learned from SDP (AMA joint venture) before PPP, the former alliance agreement of @1 A, and the CDF programme before SMP, were critical in the front-end of the selected case studies because of their experience on how the relationship(s) should be established. Our findings contribute to the ongoing literature on the influence and benefits of previous experiences and ties, and the impact of these on upcoming IOP (Buvik and Rolfsen 2015; Chen et al. 2018; Järvenpää, Eriksson, and Larsson 2022).

Nonetheless, our findings suggest that even though ties or experiences from previous projects are significant and can have multiple benefits, they are not the only factors contributing to establishing strong strategic relationships in IOP. Our findings showed that relationships may start initially from a lower maturity point, as seen, for instance, in the PPP and EWR2 (D3). Then, through the multiple actions described before, relationships improved as the IOP progressed, the relationships matured, lessons learned were applied, and leadership changes were considered. These relationship improvements can result in better project performance, as evidenced in the case of PPP and EWR2 (see IPA 2025), and in the case of @1 A (see ICE (2017, 8–9)). This finding builds on the growing evidence of the dynamic nature of IOP relationships and the effort required to establish them (Kreye 2022). Relationships in IOP are dynamic and require constant alignment between partners (Bygballe and Swärd 2019). This is challenging, as the literature (Gil 2009; Huang, Han, and Macbeth 2020), and our empirical data showed. Importantly, time was found to be critical for relationships to mature (Eriksson et al. 2019), and to perform (Zirar et al. 2025). These discussions led to the following propositions:

Proposition 2a. *Establishing strategic IOP relationships requires sustained collaborative effort beyond the initial contract; while relational contracting is essential for initiating such relationships, it is insufficient for developing them throughout the lifecycle of the IOP.*

Proposition 2b. *To establish strategic IOP relationships, project environments must support adaptive collaboration through a problem-solving attitude and mechanisms, continuous alignment of evolving goals and expectations, integrated and*

flexible ways of working, and strong relational behaviours across all organisational levels.

Proposition 2c. *Strategic IOP relationships are more likely to succeed when established from previous relationships and experiences rather than from scratch.*

Proposition 2d. *Establishing strategic IOP relationships is not necessarily successful from the outset; it requires constant alignment, mature time, and partner commitment.*

6.1.3. Relationship measurement

Across all cases, there was a lack of standard relationship measurements. Some limited measurements were found, such as including satisfaction with relationships in employees' surveys (EWR2), annual evaluation based on multiple pillars (PPP), indirect evaluation indicators such as health and safety and client satisfaction (@1 A) or the use of available tools in the market, such as the Constructive Collaboration Tool (EWR2-@1A). This suggests the industry and literature need to develop approaches to measuring relationships to improve relationship management across IOP. This finding resonates with a lack of performance-related relationship management examples in the broader IOP literature, with only a few studies tackling this dimension (Derrouiche et al. 2010; Meng 2012; Smyth and Edkins 2007).

Nonetheless, considering other framework dimensions such as, e.g. from D3 – Understanding each other, our findings highlighted leadership's importance in sensing the health of a relationship and shaping the IOP coalition's structure and culture to improve them, as seen in the EWR2 leadership change, where the previous project director of the SAIP project was bringing onboard (D6). These findings echo the literature on leadership in managing relationships in IOP (Smyth 2015; Suprapto et al. 2016; Wang, Tian, and Chen 2025).

However, even though the case studies were considered successful and had exemplary leadership, there is a latent risk that managers in leadership positions can negatively influence the project delivery as they are driving blind without relationship indicators that show the need for action. These insights inform the following propositions:

Proposition 3a. *IOP organisations should develop relationship measurements at different levels (e.g. organisational, operational, and individual) to understand, assess, and allow leaders to make the necessary changes to develop strong strategic relationships.*

Proposition 3b. *Project leaders play a fundamental role in developing, establishing, and measuring strategic IOP relationships, serving as key players in transforming the culture and IOP organisation structure.*

7. Conclusion, implications for practice, and future research

This research examined strategic relationships in four UK IOPs by extending the Johnston and Staughton (2009) framework, presenting several key propositions framed within the three themes identified, thereby contributing to the extension of RET theory and knowledge. The study finds that managing relationships in IOP based on relational behaviours rather than traditional cost or quality metrics fosters stronger strategic partnerships, providing further evidence in support of RET.

Regarding implications for practice, we suggest that if applied consciously to the industry, all of these propositions can help transition from the traditional transactional, fixed-term, product- and process-oriented initiatives to the strategic, long-term, and people-oriented initiatives. Governments and project owners could explore regulatory frameworks encouraging procurement models that foster strategic-minded relationships across the supply chain. The traditional project-by-project procurement model often disrupts continuity and reduces opportunities for relationship building. Instead, public and private sector clients should consider bundling multiple projects into programmes where possible. Public and private sector clients could reconsider how they evaluate bidders. Instead of focusing solely on cost and time-based metrics, procurement processes should incorporate relational behaviours, cultural alignment, and collaborative competencies as key selection criteria.

Managers of delivery organizations should recognize the value of prior partnerships when forming IOP teams. Where feasible, firms should retain successful partners across projects to capitalize on accumulated trust, knowledge, and ways of working. Given the critical role of leadership in shaping relationships, project owners and delivery organizations should prioritize appointing leaders with strong interpersonal and collaborative skills, not just technical expertise. Leadership development programs should also emphasize relationship-building capabilities. Furthermore, project leaders should be empowered to make strategic changes, such as restructuring teams or adjusting governance models to improve strategic relationships.

Regarding future research, the extensive research we carried out has several different paths. First, future research could benefit from researching the management of strategic relationships and the explanatory power of RET on IOP performance by engaging with the concept of business model innovation. Recent research offered a classification of business models found in construction (Li, Maxwell, and Moehler 2025). We see great potential in further integrating these two streams to develop a strategic relationship model in IOP. Second, one example of fostering strategic relationships in IOP is Public-Private Partnerships (PPP). Although TCE highlights the risks and opportunities of opportunism (Xu et al. 2024), this is an unexplored area for RET. Opportunism may directly contradict the tenets of RET. Future research may investigate opportunism and how strategic relationships behave under this phenomenon. Third, transactional relationships can be analyzed through the lens of the seven-dimensional framework by Johnston and Staughton (2009) providing a view from 'the other side' and enabling practical comparisons across projects. Fourth, fostering strategic relationships in IOP should, theoretically,

cater for greater organizational justice (Unterhitzenberger and Lawrence 2025). However, research is needed to test this hypothesis in the context of IOP. This will aid our understanding and contribute to the research stream of project behaviour (Unterhitzenberger 2021). Finally, future research could compare the UK (representing Western values) and overseas practitioners, especially those representing Eastern values (Liu et al. 2024; Wang, Tian, and Chen 2025), in managing strategic IOP relationships to identify similarities and differences that can drive improvements in the industry.

Note

1. Cited works not referenced in this document is included in the Supplementary material document.

Acknowledgments

The authors thank the Editor and the two anonymous reviewers for their comments and suggestions. We believe that the paper has greatly benefited from their insights.

Disclosure statement

No potential conflict of interest was reported by the authors.

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