

Social and cultural drivers of incentive effectiveness in infrastructure projects

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Abstract

Formal incentives systems aim to encourage improved performance by offering a reward for the achievement of project-specific goals. Despite argued benefits of incentive systems on project delivery outcomes, there remains debate over how incentive systems can be designed to encourage the formation of strong project relationships within a complex social system such as an infrastructure project. This challenge is compounded by the increasing emphasis in construction management research on the important mediating influence of technical and organisational context on project performance. In light of this challenge, the research presented in this paper focuses on the design of incentive systems in four infrastructure projects: two road reconstructions in the Netherlands and two building constructions in Australia. Based on a motivational theory frame, a cross case analysis is conducted to examine differences and similarities across social and cultural drivers impacting on the effectiveness of the incentive systems in light of infrastructure project context.

Despite significant differences in case project characteristics, results indicate the projects' experience similar social drivers impacting on incentive effectiveness. Significant value across the projects was placed on: varied performance goals and multiple opportunities to across the project team to pursue incentive rewards; fair risk allocation across contract parties; value-driven tender selection; improved design-build integration; and promotion of future work opportunities. However, differences across the contexts were identified. Results suggest future work opportunities were a more powerful social driver in upholding reputation and establishing strong project relationships in the Australian context. On the other hand, the relationship initiatives in the Dutch context seemed to be more broadly embraced resulting in a greater willingness to collaboratively manage project risk. Although there are limitations with this research in drawing generalizations across two sets of case projects, the results provide a strong base to explore the social and cultural influences on incentive effectiveness across different geographical and contextual boundaries in future research.

Keywords: incentives, collaboration, infrastructure project, Australia, the Netherlands

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1. Introduction

Internationally, construction industries are faced with rapid globalisation requiring new governance structures to bridge the gap between social, legal and cultural work practices, to efficiently manage global supply chains. A major emerging issue in the procurement of infrastructure internationally is the need for greater emphasis on integrated delivery incorporating vertically and horizontally integrated construction organisations (Levitt 2007; Renier, Volker et al. 2009). This has led to the recent developments in integrated governance mechanisms including alternative financing and delivery arrangements such as Alliancing and Public-Private Partnerships. Advances in the areas of integrated design/construction and asset management systems (e.g. Building Information Modelling), vertically integrated supply chain networks (e.g. strategic alliancing) and alternative project procurement and financing arrangements offer opportunities to improve construction sector productivity (Roehrich and Lewis 2010).

Similarly, increased global competition across industry firms has seen greater emphasis placed on innovation offering more effective ways to compete and achieve greater value for money. However, there remain major challenges in enhancing infrastructure project performance within a highly complex (and unique) multi-firm production model. This model is characterised by fragmented supply chains, typically resulting in disjointed relationships across project networks (Rose and Manley 2012). However, it is also characterised by highly interdependent project outputs. Under these conditions, a key challenge faced by project leaders is how to effectively align formal and informal governance arrangements in a complimentary way (Hinze 1994; Gann and Salter 2000; London 2001). According to Miozzo and Dewick (2002), the strength and capacity of project-based organisations to increase competitive advantage and encourage innovation is driven by: 1) the management and structure of ownership of the contractor; 2) the creation of inter-firm institutions to facilitate innovation diffusion, while maximising firm-specific competencies; and 3) established relationships and collaboration between organisations and external knowledge sources. Thus, project performance and innovation is argued to be governed partly by the nature of the project delivery approach and more specifically, by how the delivery approach may encourage or discourage the formation of a coherent and coordinated 'project organisation'.

In light of the argument that incentive systems need to be carefully applied to suit specific project context, this paper explores the nature of attitudes and motivations of contracted parties towards incentive goal achievement across culturally and organisationally varied environments. The authors compare the effectiveness of incentive systems to motivate contracted parties towards incentive goals across four broadly different infrastructure projects: two road reconstructions in the Netherlands and two building constructions in Australia. This comparative analysis aims to provide guidance for improving the effectiveness of incentive systems to promote project performance by deriving similarities and differences across the Australian and Dutch contexts. Secondly, the paper explores the nature of shared social drivers that influence the effectiveness of incentive systems. The paper now presents our theoretical constructs that underpin incentive motivation and the drivers of financial incentive motivation in construction projects to be explored in the case studies that follow.

2. Theoretical Background

2.1 Motivation

Incentives offered in construction projects aim to increase motivation and commitment of project stakeholder towards above 'business as usual' performance. Broadly, their effectiveness to induce motivation is founded on principles of work motivation theories. Work motivation can be defined as a set of external and internal energetic forces that initiate work-related behaviour and determine its form, intensity, direction and duration. Reward systems such incentives impact on motivation, which in turn determines effort and ultimately performance (Van Herpen, Van Praag et al. 2002). Although there are a wide range of motivation theories, three key theoretical constructs are argued to usefully inform the nature of incentive systems on construction projects. They comprise Justice, Goal Commitment and Social Preferences/Reciprocity Theory.

The perception of *fairness (or justice)* regarding how and what decisions are made about reward systems can significantly affect motivation toward reward goals. Justice theories (Colquitt 2004) identify three different aspects: fairness of decision outcomes or distributive justice, justice of the decision-making processes that lead to decision outcomes (procedural justice), and interactional justice relating to aspects of the communication process between reward providers and recipients, such as honesty and respect. As an extension to goal-setting, *goal commitment* (Hollenbeck and Klein 1987) refers to the sustained determination and motivation to try for an incentive goal – suggesting the way the goals of an incentive are managed over time will impact motivation and commitment. Key antecedents of goal commitment are those that impact on the attractiveness of goal attainment and those that impact on the expectancy of goal attainment (Hollenbeck and Klein 1987). Similar to interaction justice, economic *reciprocity* theory states contract agents prefer a condition of fairness in their exchange relationship. Depending on shared behaviour, the value of a financial reward can be perceived to be positive or negative. Thus, if the incentive's intention is perceived to be as 'calculative' or hostile, parties may view the incentive negatively, which can lead to a hostile response (Fehr and Falk 2002).

2.2 Incentive contracting

As a part of procurement, conditions of contract allocate the responsibilities and liabilities of each contracting party, and define contractual risk and reward. Although the clear definition of responsibilities in the conditions of contract encourage efficient management of risks during construction, the attitudes and motivations of contracted parties towards risk, facilitated through strong relationships and co-operative teamwork, are important for high project performance (Rahman and Kumaraswamy 2002). A common approach in to aligning the attitudes and motivations of contracted parties and improve the balance between project risk and reward for performance is through incentive contracting. Simply, incentive contracting provides the opportunity for contract parties to earn additional profit for higher performance (Bower, Ashby et al. 2002), and focus on client gain-sharing by providing a share in the client's success from a project.

Financial incentives can be combined with any type of base construction contract and can be designed to reward the achievement of a wide range of project objectives depending on the specific project. Generally, incentives are structured through: 1) the method of payment of the contract price, 2) a profit sharing (cost-plus) incentive arrangement, and 3) a performance bonus (Rose and Manley, 2011). The use of incentives aligns the contractor's objective with the client's expectations and ensures that contracted parties pay attention to the issues that are important for the client. Commonly, positive project performance incentives are used along with disincentives (penalties). However, to ensure that an adversarial relationship does not occur between the contracting parties, the incentive systems should focus on positive incentives, rather than penalties (Lahdenpera and Koppinen 2003).

2.3 Social and cultural contextual drivers

The effectiveness of incentive systems to promote effort towards client goals is highly sensitive to the context in which it is applied (Bresnen and Marshall 2000), making them highly challenging to design and implement. Effective design and implementation require a clear understanding of not only the incentive mechanism, but also the context in which it is implemented. Thus, if a financial incentive is not carefully designed to suit its context, it may induce undesired behaviour, inhibiting the formation of the trust and cooperation (Rose and Manley 2011). As incentive systems are inherently formal in nature, a key challenge faced by incentive designers is to align the formal incentive systems with informal governance arrangements in a complimentary way.

The effectiveness of incentive systems to encourage high performance is also influenced by social and cultural organisational drivers, establishing 'behavioural' norms in response to governance arrangements. Broadly, social and cultural norms are expected to influence the strength of inter-organisational relationships in the context of an infrastructure project. Cultural attitudes of interrelated project organizations are also seen to significantly influence the diffusion and uptake of innovative ideas in construction (Hartmann 2006). Broadly, cultural and social norms define perceptions of behaviour and attitudes of project parties about each other's intentions, including their trustworthiness. In the case of financial incentives, this can influence how project participants perceive the intention behind a formal incentive system.

Cultural norms can be defined at both an industry and project level and are closely interrelated. For example, cultural norms can define contract parties' independence, orientation towards rationality, willingness to communicate openly, and risk and conflict adverseness. Similarly, differences in national cultures defined by geographical boundaries can influence perceived intentions and expectations of behaviour. Thus, from an individual perspective, cognition, emotion, and motivation can be widely influenced by cultural norms, for example, the strikingly different construals between western and non-western self-perception. Although there are clearly incremental levels across countries, the western culture perception of self is defined by individuals who are independent, self-contained and autonomous, while non-western normative imperative is for individuals to maintain a fundamental *connectedness* and interdependence (Markus and Kitayama 1991). Without

going into the highly detailed description of the differences across international cultures, these types of behavioural norms can heavily influence self-perceptions, and thus, impact on the effectiveness of organisational systems. This is certainly the case in construction, where the indirect influence of cultural norms can cause difficulties with institutional mismatching across international organisational boundaries resulting in high transaction costs and conflict (Levitt 2007). Further, business cultures that place greater emphasis on connectedness and interdependence may generally have a greater tenancy towards teamwork and are less antagonistic and adversarial.

3. Methods

Case studies were seen as the best method given the complexity of project environments, and the need for in-depth understanding of the dynamics surrounding project-based motivation in order to effectively scope and identify the social and cultural drivers (Edmondson and McManus 2007; Easton 2010). In this paper, a comparison is made of the social and cultural drivers seen to promote or inhibit motivation towards incentive goals of four integrated Design and Build cases in public infrastructure: two road reconstructions in the Netherlands and two building constructions in Australia. For this study each of the authors selected two cases that were collected in their country of origin in the context of independent research projects. The selection of the cases can be considered as revelatory since they originate from a different research context and types of infrastructure. Yet, all four cases share the same innovative and incentive based character. This provided a rich data set to compare and contrast the differences in project types and the nature of project delivery (including the cultural and social differences) across the cases, while maintaining the character of the incentive system relatively constant.

In each case study, the client and head contractor involved in the procurement and design stages of the case projects were interviewed. Two people from each of party were interviewed on each project, ranging from 60 to 90 minutes duration and based on semi-structured questioning. The semi-structured interviews involved general questions about the project characteristics and the stage outcomes (e.g. *Where there any constraints in the design stage that effected performance towards incentivised goals?*), followed by questions relating to distributive and procedural justice, goal commitment and social preferences as important motivation constructs. Example questions relating to the motivation constructs included *'Did you see value in pursuing the incentive goal? Where you involved in the goal setting process?* (Goal Commitment); *What influenced your perception that the incentive reward on offer was fair/ unfair in relation to pursuing project goals?* (Justice); *Did you feel the underlying intention of the incentive was honourable and fair?* (Social Preferences). Apart from a comparison of the contractual agreements and case details, the cases were compared based on *incentive characteristics* seen to impact on the effectiveness of the design and implementation of incentive systems based on Rose (2008). This paper focuses on aspects that relate to the selection and design phase of the projects. These *incentive characteristics* were unpacked across each case to identify differences and similarities in how the incentives were designed and applied; and the nature of the social and cultural drivers perceived to influence incentive goal effectiveness. The *incentive characteristics* explored in this paper are as follows:

1. Incentive goal and reward opportunities: the range of goals covering key project priorities and the nature of the incentive reward on offer across project stakeholders.
2. Design and build integration: the involvement of project parties, particularly the contractor, in the design process and integration with construction.
3. Risk allocation: how design and construction risk is allocated under the base contract.
4. Value-driven tender: the nature of the tender selection process in promoting 'value' selection.
5. Future work: project stakeholder opportunities for future work.

Each case project was treated as an independent study which was subsequently subjected to cross-case analysis under the previous headings. Throughout data analysis and reporting the authors were frequently cross referenced between the interpretation and the original data. They regularly contacted each other to discuss the framework and share a common understanding about the cases and its context. This process can be characterised as ex ante use of theory in qualitative research. The general aim of this approach is 'not to build consensus aiming diverging theoretical perspectives but rather to use their divergences as vantage points for creating new insights' (Andersen and Kragh 2010, p. 53). This approach suited the study since the research focused on the commonalities and differences between the four cases and two countries.

The four cases comprised: Brisbane Magistrates Courts project (A1) and the Lyell McEwin Health Redevelopment project (A2) where social infrastructure (building) projects delivered in Australia, while Highway package F (D1) and Highway A12 (D2) were civil infrastructure projects delivered in the Netherlands. Further case project details and the incentive characteristics can be found in Volker and Rose (2012).

4. Findings on Incentive Drivers

The incentive characteristics identified from the case studies are now compared to identify social and cultural organisational drivers seen to impact on incentive effectiveness across the case contexts in the selection and design phase of the projects. The five incentive characteristics are: incentive goal and reward opportunities, design and build integration, risk allocation, value driven tender, and future work.

4.1 Incentive goal and reward opportunities

4.1.1 Multiple goal opportunities

Case A2, D1 and D2 had a wide range of performance goals and multiple opportunities to secure the financial incentive, resulting in improved level of motivation. This also was seen to encourage teamwork as goal achievement required effort from a wider range of project participants across multiple goals. This induced a team mentality towards goal achievement (high interdependency and a social expectation for achievement) in the Dutch cases and A2, which was not present in A1. These research findings indicate the importance to clearly define the project goals at the early stages of the project, and 'balance' incentive goal parameters to prevent overemphasis on particular goals. The client in the Dutch situation

applied several innovative procurement methods (e.g. best value procurement, listing the risks and key performance indicators), which enabled both the client and the contractor to better define the project goals in a relatively early phase of the project and improved the sensemaking processes between the client and the contractor. The bidders also made a more explicit choice to aim for the financial bonuses. In all projects, communication about common goals stimulated the development of a collaborative culture from the beginning of a project. During the interviews, examples were mentioned of situations in which both parties were willing to take the blame in situations where unexpected events threatened the achievement of an incentivised goal.

4.1.2 Incentive distribution equality

The research findings indicate the importance in offering the incentive reward to those parties expected to contribute to overall performance in key project priority areas. Equality in how incentive rewards are distributed based on performance contribution was perceived to be an important social driver and such expectations were defined at the early project stages in A2 and the Dutch cases. In the case of A2, the project participants valued the client's decision to allow the project team to decide how the incentive amount would be distributed. Project parties jointly agreed during the design development stage that the bonus pool would be distributed according to fee proportions, an equitable offer for those parties involved. This was also part of the best value procurement approach, which is a specific dialogue-based tender procedure. This tender was less formalised and more open than the competitive dialogue procedure, yet both leading to a commonly accepted risk perception and consensus on the assignment and related rewards. The payment structure and the level of bonuses and penalties were primarily determined by the client in D1 and D2. On the other hand, A1 only offered the incentive reward to the managing contractor to the disappointment of consultants and key subcontractors who were seen to contribute to pursuing stretched scope incentive goals. By setting multiple goals and levels of reward across the project, clients can ensure goals remain achievable, teamwork is fostered through joint commitment, and credit is given for partial success.

4.2 Design and build integration

4.2.1 Early involvement of key stakeholders in design

The results of project A2 and D2 indicate a strong emphasis on integrated design build contracts contributes significantly to timely and cost efficient project delivery. According to the A2 project client, the early involvement of contractors assisted the team to "find building smarts that would improve the value of the project" - and gave "a good indication of what [the team] were aiming for in terms of cost reduction". This was also seen to improve the level of collaboration. Project A2 also uniquely involved key subcontractors in the design stage, which was seen to improve the managing contractor's effectiveness in identifying value-added design options. The tender dialogue in D2 encouraging the discussion of concept designs with the client and award based on the expected traffic flows, sustainability and level of stakeholder inconvenience. This introduced discussion about innovative construction methods to increase the construction speed. The client contract manager indicated that

“most of the questions related to the qualitative elements instead of the bolt and nuts” which shows a different focus by the bidders.

4.2.2 Emphasis on design-build collaboration

A difference between the Netherlands civil and Australian building case projects was the increased emphasis on the design quality in building projects in comparison to road infrastructure. As such, participants involved in the building projects placed greater emphasis on the involvement of the contractor and key subcontractors in the design stage, as design discrepancy risks can be potentially higher in building projects in comparison to civil road projects. However, this did not discount the impact of design integration on improving project collaboration. In fact, improved definition of project objectives and constraints through input from multi-disciplinary experts in design commonly assisted with value and risk management. This led to more stable cost calculations and satisfying incentive goals. It also provided the opportunity to build project relationships earlier, improving motivation towards incentive goals. Greater emphasis on design build integration created significant change in the regular operating environment for the contractor of D2. According to the D2 project leader “it seems as if the time has finally come to accept the benefits of integrated design deliveries”.

4.3 Risk allocation

4.3.1 Willingness to share cost overrun risk

In all cases the allocation of risk under contract arrangements impacted on the implementation of the incentives. In case A1, the managing contractor took on a greater share of construction cost risk in comparison to A2 under different contract forms. According to the participants involved in project A2, the client’s willingness to share construction cost risk was seen to improve the managing contractors’ ability to achieve the incentive goals, as they were less likely to be focused on their own financial liabilities, and more likely to perceive the client behaviour as fair. For example, the managing contractor perceived the client’s willingness to share construction risk “broke down the ‘us versus them’ attitude which is prevalent in [traditional] contracts and focused our joint attention on achieving the project goals.” This perception of justice was an important social driver for developing the project relationship and thus, promoting motivation towards the project goals. On the other hand, the A1 project participants acknowledged that the contractor resorted to a self-protective position due to their high risk liability, partly resulting in an unwillingness to pursue the stretched scope incentive goals.

4.3.2 Perception of risk assurance and project culture

In the tender phase of D2, a list of previously identified risks and opportunities were made available. According to the project leader, the contractor tenderers could decide which of these risks were to be included in their job description. After submission of the final bids, it appeared most of the contractors accepted the majority of the items. This was probably due to the level of competition in the market and the expectation that other contractors would

also accept the majority of the risk. Project D1 included a shared risk fund. In case of unexpected events, the contractor was allowed to solve the problems based on actual costs +5% cost mark-up. The contractor was entitled to 25% of the remainder of this fund after delivery of the project. In this way, the contractor was stimulated to create preventive measures in the early phase of the project that would leave the risk fund untouched, which occurred. The results indicate that this risk fund contributed to the project culture in which not every detail and possible additional costs were discussed. Yet, in D2 the client project leader indicated that hardly any unforeseen costs were filed: “apparently you don’t need a shared risk fund if the arrangements are just”. This was an interesting finding in comparison to the Australian cases, as the bidders were offered the opportunity to define the level of risk to be taken as part of their job description during tender, thus encouraging a level of fairness (justice) in their initial dealings. Also, the shared risk fund promoted a positive project culture through the perception that if difficulties arose funds were available, despite most of the risk taken on by the appointed contractor. In contrast, the Australian cases indicated contractors took a protectionist view of risk. This may be due to cultural differences across the two industries, however, likely related to how conducive the project environment was towards defining and managing risk across the two sets of case projects.

4.4 Value-driven tender

4.4.1 Non-price selection criteria

All case projects involved some form of non-price criteria that encouraged selection based on value in comparison to price alone. Both A1 and A2 had relatively high non-price proponents, with project A1 affording a 30% price and 70% non-price split, and project A2 with a two-stage 40% price and 60% non-price split. Non price criteria included proven past performance and ability; resource strategy; project methodology; commitment to relationship management; and community consultation. In D1 the price/quality ratio was 30/70, in which the quality included the allocated risks, offered opportunities, planning, and capabilities key project personnel - tested during an interview. This resulted in a selection process with a high level of information exchange between client and bidder. Although the bidders were nervous about the qualitative aspects of tender judgements in D2, they placed importance on information exchange during the tender to build a successful project relationship. This was similar to the Australian cases where the currency of accurate informal information during the tender stage was also seen as an important social driver to building project relationships.

4.4.2 Alignment of ambitions

The results of all cases indicate that the selection of project participants based on their ability to add value to the project (rather than the traditional price-focused tender selection) increased the project participants’ expectations that incentive goals could be achieved, promoting commitment. This was also seen to encourage a willingness to align with the team objectives and meet the client expectations by which they were selected. In the Australian cases this was seen as an important social driver as the contractor and consultants felt “an obligation to prove [they had been] rightly appointed” to deliver this important and highly

visible social infrastructure project. The Dutch projects were part of publicly announced improvement trajectories in the road network as part of an economic stimulation measure. This commitment to high performance was reflected through all project team leaders, who had a personal stake in achieving the higher order project goals. In some cases the project leaders were specifically selected to match the value-based culture of the project. This showed that the drivers of the project organisation were strongly embedded in the organisational and social context of the organisations involved.

4.5 Future work

4.5.1 Long-term business relationships

Future work is a powerful performance driver that seems to be becoming increasingly important in the global construction industry. The results from the Australian cases identified that due to a highly competitive local building construction market the desire to uphold and improve reputation, so as to increase future commercial opportunities, was a strong social motivator to maintain business relationships with the client and pursue incentive goals. This was particularly relevant to public infrastructure projects, where state governments are major repeat clients. It is likely that the desire to strengthen reputation with these clients would be stronger than with clients who are less likely to provide further work opportunities. This was particularly evident in the project outcomes for project A2, where the key project participants were offered the opportunity to be reappointed to on-going stages of the hospital redevelopment program if they achieved high performance. This strongly intensified the desire to achieve the incentive targets outside the financial reward on offer where the contractor was “driven to maintain the good relationship with the government client so [they] would be looked on favourably in future projects...as valued reward outside the [financial] incentives.”

4.5.2 Need for transparency and integrity

In the Dutch context, D1 and D2 were part of a strategic governmental program to support the construction industry surviving the recent credit crunch. For these relatively large projects, there are a small number of competent players in the field. Therefore, the client decided not to exclude any party in the bidding process. However, the market situation has changed dramatically over the last few years. This has resulted in construction companies placing great importance on future work opportunities to remain buoyant, even accepting lower profit margins to do so. Additionally, the procurement obligations have increased the urge for transparency and objectivity. This had led to a greater need for quality and service assurance within running contracts and a strong preference for long term integrated contracts which include performance based maintenance agreements, such as 25-year Design Build Finance and Maintain (DBFM) contracts and regional asset management responsibilities for 5 to 10 years. These long term commitments stretch the evaluation period of projects, but also increase the size of projects while limiting the amount of new projects. This caused an increase of activities and accompanying responsibilities that are outsourced to market parties. In a sense, long term contracts can be considered as future work

assurance as well. These arrangements require greater transparency in collaboration and performance measurement, relating to improved reciprocity among both parties.

In the Australian cases, future work opportunity was a highly influential organisational driver, seen to increase the effectiveness of the incentive system. This response was driven by increased levels of distributive justice, where contractors' could clearly see if they achieved high performance (achievement of incentive goals) it was likely to translate into future work opportunities. The contractor on A2 was also driven by reciprocity reflected in commitment to their client through the client's offer to re-appoint them for on-going construction stages. This direct link was not prevalent in the Dutch cases. This may have been due to the localised nature of the construction industry in Australia, where future work is strongly driven by informal relationships. This may reinforce the need to maintain strong client-contractor relationships and uphold reputation as a social driver embedded in industry culture. Currently in the Netherlands, informal relationships in the construction industry are publicly condemned since a major fraud case was revealed in 2001, badly damaging the reputation of the construction industry. The need for strong client-contractor relationship in the Netherlands originates from the character of the long-term integrated contracts. Moreover, the Dutch road, rail and governmental building agencies have recently focused on developing a joint past performance assessment system with the aim to further develop this as a performance driver, as well as a quality assurance mechanism.

5. Conclusions and discussion

Incentive reward systems should be fairly applied so that rewards and measurement processes illicit their desired behaviours in light of the project environment. These shared behaviours can heavily influence the establishment of collaboration and trustworthiness in on-going project relationships, acknowledging that project participants will be more likely to cooperate voluntarily and reciprocate positive behaviour if they jointly perceive an incentive intention is fair, honourable and recognise high performance. As such, the use of incentives introduces complex social and cultural organisational dynamics that impact on effectiveness i.e. their ability to promote motivation towards higher order project goals. These complex dynamics result in challenges for infrastructure project leaders, particularly due to the highly sensitive of incentives to the context in which it is applied.

Effective incentive design thus requires a clear understanding of the impact of different delivery strategies and social and cultural contexts on incentive goal motivation. Drawing on the results of two Australian social infrastructure (building) case projects and two civil (road) infrastructure projects from the Netherlands, differences and similarities in key social and cultural drivers were explored. This research focused on the selection and design phase of these projects, with particular emphasis on aspects of the incentive design and broader procurement approach that drive motivation and commitment towards incentivised goals early in a project. Despite significant differences in the project characteristics across the two countries, results indicate they experience similar social drivers impacting on the incentive effectiveness. Case results identified that contract parties saw the incentive as a commercial opportunity to increase their profit margins, but also acknowledged the influence project and relationship management processes had on their commitment to the project and pride in the

achievement of project goals in light of the social environment. This was consistent across the two countries and across the two types of projects. This suggests these processes, particularly the value driven procurement initiatives, enhanced the collaborative environment between client and contractor and increased the predictability of the risks, intensifying the motivational effect of the incentives on offer.

Despite these common themes, there were two notable differences across the Australian and Dutch contexts. They related to differences in how contract parties perceived future work as a driver to forge on-going project relationships; and differences in how risk in pursuing project goals was perceived and managed. Firstly, future work opportunities were identified to be a more prevalent social driver in the Australian building context due to a highly competitive building construction market in comparison to the Dutch market, who have limited amount of players in road construction. This has induced an Australian industry culture driven by local relationships, reinforcing the need to maintain a strong reputation in the market to maintain competitiveness. Although this was not as prevalent in the Dutch cases, several Dutch agencies have recently focused on developing assessment systems based on previous performance with the aim to further develop this as a performance driver and act as quality insurance measure. Secondly, case results indicate there were differences in how contract parties responded to project risk. Contractors in the Dutch context seemed to more broadly pursue an open book approach in fairly defining and managing risk, while in the Australian context contractors took a 'hard-line' protectionist view of risk. Although difficult to generalise across a small sample, this may be due to greater willingness of Dutch project participants to embrace an innovative collaborative project culture with clear tasks and responsibilities. On the other hand, this also may be due to how conducive the project environment was towards defining and managing risk across the two sets of case projects.

In summary, findings suggest multi-levelled incentives systems, value-driven procurement, improved design-build integration, equitable risk management and promotion of future work opportunities are important ingredients for developing strong project relationships, leading to improved project performance. Early evidence indicates these shared drivers may fundamentally apply across different social and cultural organisational settings. Although there are limitations with this research in drawing generalisations across two sets of diverse case projects, the results provide a strong base to explore incentive systems across a wider range of project types and across social and cultural boundaries in future research. As an early contribution to this knowledge, the research suggests if incentives are designed such that participants genuinely value the financial reward on offer, the incentive goals are perceived as achievable and the incentive is positioned within a complementary set of procurement initiatives that promote recognition and reward for high performance, in light of project context.

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