



A conceptualisation of relationship quality in construction procurement

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Abstract

Relational contracting is often regarded as means to improve performance and profit margins in managing projects. A continuum of contracts in construction projects attempts to provide fit for purpose relationships to different working conditions; hosting levels of relationship quality. This study aims to explore contracting methodologies within construction procurement in search of practical and manageable relationship quality attributes. Initially relational attributes such as teamwork, commitment and trust along with seven main strategies for achieving these attributes are extracted from relevant studies. In the second stage construction expert interviews suggest that performance satisfaction is also a practical attribute and necessity of relationship quality. The study proposes a framework of actions and seven strategies which can facilitate the attributes associated with relationship quality. Finally based on the framework and three case studies five levels of *transaction*, *action*, *strategy*, *attribute* and *relationship* are demonstrated for relationship quality evaluation in construction project's procurement practices.

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1. Introduction

Project management has a practical and theoretical initiative to focus on collaboration, communication and performance based selection of project participants. This is regarded as a solution to problems arising from the project oriented and adversarial nature of the construction sector (Meng, 2012; Yeung et al., 2012). In theory relationships are often treated as a competency or essential asset required for managing project networks. These are the catalysts to develop collaboration and provide better opportunities for future business as an intangible asset to construction organisations (Eriksson et al., 2009;

Pauget and Wald, 2013; Voss and Kock, 2013; Zou et al., 2014). Nevertheless, from project management and business perspectives, the ultimate goal is to achieve better overall performance and better profit margins. In addition, good relationships with business partners may overcome fragmentation and facilitate collaboration. This can be regarded as a strategic effort for improving performance. Therefore relationships are not the goal, but are the means for achieving strategic goals (Jelodar et al., 2013).

Although working relationships in construction starts with acquaintance and commencement of projects, they are largely articulated and governed by contracts. Traditionally contracts were formulated to assign responsibilities, accountabilities and liabilities to parties involved in different projects. MacNeil (1974) introduced the notion of relational contracting; the idea was to apply mutual planning and relationship development. It is believed that contracts follow a continuum to serve a purpose

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from fully transactional at one extreme to vertical integration at the other; therefore all contracts except the fully transactional carry a relational element (MacNeil, 1974; Sako, 1992). However standard forms of contract are not usually good hosts for good working relationships since their initial goals are to place the blame where there is liability. As a solution contracts with greater capacity for collaboration were structured and popularised in order to stimulate better quality relationships; thus they are known as relational contracting methods.

Ever since these initial research endeavours on relational contracting have emerged; connections and bridges have been made to the construction industry. What is obvious is that in the course of the past few decades' attempts have been made to procure for better relationships in construction projects. Hence managing project is being pushed towards more relational approaches. The problem of collaboration and better relationship in construction still subsists to this day and research and practice of such approaches are still rudimentary (Wolstenholme, 2009; Yeung et al., 2012; Zou et al., 2014). The dominant perception is that relationships should be determined by legal boundaries and arrangements such as partnering and alliancing. Subsequently various research work have focused on relational contracting approaches such as partnering and alliancing (Alderman and Ivory, 2007; Bygballe et al., 2010; Eriksson et al., 2009). Therefore the working relationships in general are formally orchestrated through contracts; nonetheless arrangements such as partnering recognise that difference and even divergent goals of parties need to be met and aligned in order to achieve desired strategic outcomes such as maximizing profit (CII, 1991). In addition relational approaches may include informal alignment of goals and agreements outside the contractual setting as well as the more formal structure of relational contracting. The relational approach regardless of its formal (relational contracting) and informal construct carries a certain level of Relationship Quality (RQ) which could be a measure of assessment for the relationships between the project participants.

Apart from the mentioned approaches in studying relationships individual research has also been performed to identify certain factors or elements which may affect relations and bonds between the parties in construction. Attributes such as trust and mutual goals can also effect collaboration and relationships (Meng, 2010). Harper and Bernold (2005) also mention lack of trust as impediments to partnership relationships. Accordingly because of the formal and structured focus to relationships in construction practices; contracting strategies such as the commitment to fair construction contracts charter based on "gentleman's agreement" notion, and the engineering and construction contract based on a spirit of mutual trust and cooperation have been developed to fulfil the relational prerequisite (Cox and Thompson, 1997). Some of these contracting techniques try to build in trust into a relationship by formal approaches; however there are contradicting views that trust cannot be orchestrated and is in need of time and effort to be developed.

Other sectors have tried and formulated relational approaches especially through the concept of RQ long before the construction industry. Consequently they have obtained a

level of maturity and also professionalism in both research and application of collaborative and relational approaches. Since the early 1990s RQ is used in marketing as a means of implementing relationship marketing which focuses on customer retention (Crosby et al., 1990; Da Silva et al., 2002; Hennig-Thurau, 2000; Storbacka et al., 1994; Wray et al., 1994). In business context RQ allows for the evaluation of buyer–seller relationships (Da Silva et al., 2002). Many different factors such as trust, ethical conduct, behaviour, satisfaction and commitment have been attributed to RQ (Bejou et al., 1996; Lagace et al., 1991).

Historically there has been a general movement towards better collaboration and relationship development with the aim of stronger more constructive bonds for better problem solving and troubleshooting. The ultimate goal is improving performance and project outcomes in a more business oriented environment which has a clear long-term focus. However such movements have not been unified and tools such as RQ have not been explored in construction projects. The other problem is the formal orchestration of relationships in construction which may reduce flexibility and make relationships more superficial and unrealistic. The relational contracting and the whole relationship development agenda in construction are similar in concept to the relationship marketing movement therefore a notion such as RQ could be used in evaluating construction relationships. Hence the main purpose of this study is to identify and conceptualise the possible attributes associated with RQ in construction projects and explain how RQ could be maintained and developed in construction procurement practices.

2. Relationship quality: definition and theory

Initially the concept of RQ was suggested as an indication of how appropriate a relationship is for particular purposes; therefore it was soon applied in relationship marketing. Many definition and conceptualisations have emerged, and accordingly there are disagreements and consensus over different dimensions of relationship quality. Hennig-Thurau and Klee (1997) defined RQ as the "the degree of appropriateness of a relationship to fulfil the end needs of a customer", however such definitions do not depict the theoretical implication of the concept. Other researchers have tried to identify factors, attributes, and a construct which can explain the concept realistically which is applicable in theory and practice. However there has been disagreements as to what should these factors or attributes be since relationships are human driven ventures and have significant complexities. From very early stages it was generally agreed on that RQ is "high order construct" (Crosby et al., 1990); implying that it is explained by more than one layer of latent variables or attributes (Hair, 2010). Based on popular literature and mainstream research of marketing and business, Roberts et al. (2003) advocated an attributional definition, and propose that conceptual meanings of constructs are anchored by the properties and/or attributes they possess. Consequently it is widely believed that RQ is attributed as a high order construct made of several distinct though related dimensions or attributes,

which can deliver an evaluation tool for working relationship status (Ashnai et al., 2009; Bahar et al., 2009; Jelodar et al., 2015b; Lages et al., 2005). Attributes such as ethical behaviour, satisfaction, commitment, opportunism, and trust have been considered as RQ attributes or dimensions (Roberts et al., 2003).

However, there is a lack of research in nature and development of relationships in construction, especially informal relational approaches (Bygballe et al., 2010). Examination of previous studies revealed that contracting parties often neglect a systematic evaluation of their working relationships because their relationships are often considered as ‘one-off’, i.e. ending after project completion (Ling et al., 2014; Meng, 2010). Others suggest that systems, procedures, and methods flow and thrive in suitable essential relationships (Miles, 1996). Therefore, proactive management of relationships is of tactical and strategic value. A shift from relational contracting to proactive relationship management principles should be promoted in project management (Smyth and Edkins, 2007). Hence theoretically RQ can assess the status of relationships which is much needed for monitoring and controlling construction projects. Jelodar and Yiu (2012a, 2012b) recently reconfigured the concept of RQ with the aim to realise the value of such monitoring systems in construction projects. This is due to the fact that relationship status between parties may have a direct impact on project success and performance (Jelodar et al., 2015a; Meng, 2012).

3. Methodology

To achieve the objectives of this study, an innovative two-stage methodology has been designed and implemented. In stage 1 the “*Theoretical Review*”, a comprehensive review of relevant literature from well-respected sources has been carried out to identify different characteristics of relational approaches in construction ‘*Theoretical Review*’. For stage 2 known as the “*Practical Exhaustive Investigation*” expert interviews have been performed to explore the practical implication of different RQ attributes and make connections with the underlying theories identified in the previous stage. The two stages are described as follows:

3.1. Theoretical review (stage 1)

Different publications and research work in construction have been identified by using a combination of keywords such as relationships in project management, relational contracting, partnering, alliancing, and supply chain relationships. For this purpose sources such as International Journal of Project Management (IJPM), Journal of Construction Engineering and Management (JCEM), Construction Management and Economics, Journal of Management in Engineering, and Journal of Engineering Construction and Architectural Management were chosen. These journals generally cover the mainstream knowledge areas of construction project management (Tang et al., 2010; Wing, 1997). A total of 81 articles have been identified; after an initial examination 38 of them are shortlisted because of their relevance to this study and are

chosen for full review. By using the process of reduction, relationship attributes are extracted and classified (Jones, 2007). In this process, certain units of text are detached from the selected articles in the process of “de-contextualisation” which is followed by concluding a separate meaning in a process of “re-contextualisation” (Richards, 2002). This method is depicted by Jones (2007) as a qualitative coding approach, and is the basis for Nvivo coding without a priori knowledge method (Glaser and Strauss, 2009).

A creative approach is used to classify and drive the underlying constructs within the literature by introducing measures of criticality, citing and significance in literature. Previous studies have adopted similar approaches and classified relationship attributes based on their popularity in different studies (Meng, 2010; Roberts et al., 2003; Yeung et al., 2012). However more can be explained by a detailed analysis of the content of statements made in association to these attributes. Therefore in this study a criticality index is created to evaluate the importance of the attributes cited in each publication. This is according to the express language and emphasis that different authors use for describing the association of each classified attribute with relationship development. This method is described by Richards (1999) as using the data as their own descriptors. The measure of criticality is obtained by examining the broken-down statements regarding each relationship attribute in construction projects, and is performed by Nvivo 10. The criticality ranges from 1 (being uncritical) to 5 (being extremely critical) depending on the express language used. Appendix I demonstrates the criticality index and the de-contextualisation of statements used to describe the association of attributes to relationship quality. Citing measure relates to the number of times that these attributes have been distinctly mentioned in different selected articles. Finally significance in literature is calculated through Eq. (2.1). The abovementioned measures are used to create a bubble chart and analyse RQ attributes.

$$\text{Significance in literature} = \frac{\text{Citing}}{\text{Total number of articles}}. \quad (2.1)$$

3.2. Practical exhaustive investigation (stage 2)

Expert interviews are carried out in this stage to study the practical relational trends and attributes applied in construction culture. Semi-structured open ended interview schedule is developed since they allow for a strategic data collection approach with a great degree of freedom and flexibility (Kvale, 2008). This kind of qualitative research can provide key expert insight which is closer to practice and also identify different styles of managing problems (Flick, 2009). Moreover interviews can provide a basis for interpretation and validation of other findings from parallel studies (Gubrium and Holstein, 2002). Based on Glaser and Strauss’ (2009) suggestion theoretical findings and sampling are integrated to the point where theoretical saturation is achieved and no new fact or theory can be derived. This sampling technique is appropriate for interviews and has been applied by different researchers

(Auerbach, 2003; Glaser and Strauss, 2009; Martin and Gynnild, 2011). Experts are chosen in a process of theoretical sampling via purposive sampling considering different competencies and authority fields in construction activities (Patton, 2002). Although in the previous stage a classification of attributes is obtained, the experts are unaware of this classification to avoid any potential bias. These interviews are designed in an exhaustive manner with the aim of exploring construction relationships from both negative and positive perspectives. The expert interviews are structured with principle questions followed by complementary questions for maximum tangibility and comprehension of responses (Chen and Partington, 2004). If the experts are asked “what do you think determines RQ in construction activities?” then a certain definition for the term RQ is also required; but such definitions are not widely agreed upon which makes data collection difficult and to some extent unreliable. Thus, with the developed principle questions, answers could be based on direct previous work experience in managing projects. They can also provide examples of different factors, situations, contractual circumstances, behavioural issues, and even organisational and work cultures effecting RQ among parties. The interviews lasted around 1 to 1.5 h, and are audio recorded, transcribed and imported to Nvivo 10 for data classification purposes. A sample of the interview schedule and questions are included in Appendix II.

The pool and classification of RQ attributes obtained from both stages are collated and discussed thus the most appropriate attributes could be identified. Apart from general knowledge and information, comparative case based questions are used to acquire practical information, themes and patterns emerging from these cases. The interviews were asked to provide examples and if possible illustrative cases to justify their claims. The case based questions had an engineered outline for data consistency purpose, and consequently the findings can be applicable elsewhere by adjustments according to the situation (Eisenhardt and Graebner, 2007). Three of the cases were chosen and used in discussion to demonstrate how practitioners implemented relational processes in construction and ultimately classify the levels of RQ they achieved as part of a conceptual model.

4. Findings

From analysing the chosen research work segments of text associating different attributes to relationships are classified, and grouped in Table 1 based on measures of criticality, citing and significance in literature described in the Methodology section. Fig. 1 is a bubble chart visualisation of these predominant classifications using the measures in Table 1. In this figure cluster of concepts such as trust, general commitment, commitment at senior level, collaboration, cooperation, communication, teamwork and many different strategies and actions have been attributed and associated to relationship quality. After analysing and re-contextualising the attributes and theories uncovered from literature broader attribute clusters corresponding to RQ were classified as four general groups of

trust, commitment, collaboration and teamwork, and strategies and actions and were illustrated in Fig. 2.

For the practical exhaustive investigation stage of the methodology a total of 21 interviews are conducted in the current study until theoretical saturation was achieved. The experts were chosen from clients, contractors, consultants, project managers, directors, general and commercial managers to create a practical knowledge platform through the actual construction project participants. In addition construction dispute resolution experts and consultants such as lawyers, adjudicator, mediators and negotiators were also included in the study. This is because these professionals serve as consultant to different parties in construction projects and are often involved in relationship management or activities which directly affect relationships. All interviewees are currently involved in New Zealand construction industry and highly experienced; the most experienced of whom are with more than 40 years, and the least one for more than 10 years. Interviewee details are included in Table 2. Although there are slight differences between the classification of the concepts in the two separate stages of methodology but in general a similar construct is apparent. The experts confirm the association of attributes such as trust, commitment, and teamwork to relationship quality. In an independent concept performance satisfaction is determined and also attributed to RQ (see Table 3). The construction experts also endorse that attributes should be incorporated and enforced in project relationship, through the preparation and application of certain strategies and actions.

Through the examination of literature and the analysis of interviews acquired from both stages of the methodology; four major attributes of *trust, commitment, teamwork, and performance satisfaction* are identified and associated with relationship quality. Furthermore categories of strategies and actions facilitating these attributes are identified.

5. Discussion

In this section the findings and the classified information from both stages of the study are collated, compared and discussed to derive a meaningful and practice framework for RQ in construction projects and activities. Initially the predominantly identified attributes associated with RQ is described and discussed. Subsequently their connections and theoretical structure are identified.

5.1. Trust and opportunism

As shown in Table 1, a bulk of studies have connected trust as a positive indicator of construction, business or other working relationships (Ling et al., 2014; Meng, 2012; Voss and Kock, 2013; Yeung et al., 2012; Zou et al., 2014). It seems that a binary of trust–opportunism controls and predicts relationships in construction projects. There is a strong debate that where there is trust then opportunism is curbed (Cox and Thompson, 1997; Sako, 1992). Meng (2010) also emphasised on this binary connection when discussing the positive and

Table 1
De-contextualisation and re-contextualisation of the literature review.

Relationship Attributes	Criticality	Citing	Significance in literature	Average Criticality	Total Citing	Significance in literature	
Trust, Inter organizational trust, Trust build on personal relationships, Trust and opportunism, Mutual trust, Self-interest and distrust, Distrust, Previous interactions and Trust building of partners, Trust building and Maintenance	4.20	30	78.95	4.2	30	78.95	Trust
Commitment, Understanding each other’s commitment, Long-term commitment, Uneven commitment	3.50	12	31.58	3.27	16	42.11	Commitment
Senior management commitment, The commitment of top management, Top management support, leadership	3.00	10	26.32				
Collaborative team culture, Formulized team building, Teamwork, scope for teambuilding	3.20	10	26.32	3.39	25	65.79	Teamwork
Communication, Open communication, Transparency and effective communication, Communication via the feedback link	3.70	16	42.11				
Cooperation, Cooperation and communication	2.90	6	15.79				
Consistent objectives, Acting consistent with objectives, Mutually agreed goals, Joint goal formulation, Common objectives, mutual basis for stakeholder interests	4.00	23	60.53	2.83	33	86.84	Strategies and actions
Joint evaluation	2.00	1	2.63				
Problem solving, Dispute resolution system, Conflict management	2.50	13	34.21				
Continuous improvement & benchmarking process	2.70	10	26.32				
Incentives, Performance incentives linked with common goals, Incentives and shared culture	2.60	5	13.16				
Power, Fairness, Equity and empowerment	3.80	6	15.79				
Risk allocation and sharing, Unfair risk and reward plan, Joint responsibilities	2.70	8	21.05				
Resource sharing, Shared culture	2.00	5	13.16				
Win-win approach, Win-loos attitude	4.00	4	10.53				
Flexible Attitude, Flexibility in contract	3.00	2	5.26				
Procurement strategy, (competitive tendering), Clear contracts	2.30	3	7.89				
Long term quality focus	1.00	2	5.26				
Cultural issues, Compatible Organizational culture, cultural inertia	2.00	4	10.53				
Education and learning, Training, Client competencies and learning	2.30	3	7.89				
Experience in relational contracting	1.00	2	5.26				
Effective coordination	4.00	1	2.63				
Clear understanding of roles and responsibilities	4.00	3	7.89				
Respect	2.00	1	2.63				
Personnel change	1.00	1	2.63				
Integrity	2.00	1	2.63				

negative factors affecting construction supply chain relationships. The literature search identified 30 citing which host different contexts of trust in one form or the other as a relationship attribute (see Table 1). Trust is perhaps the most

valued re-contextualised attribute associated with relationship quality. Due to its high citing, calculated criticality of 4.20 and significance in literature of 79% trust is represented by the largest bubble in the top right hand side of Fig. 1.

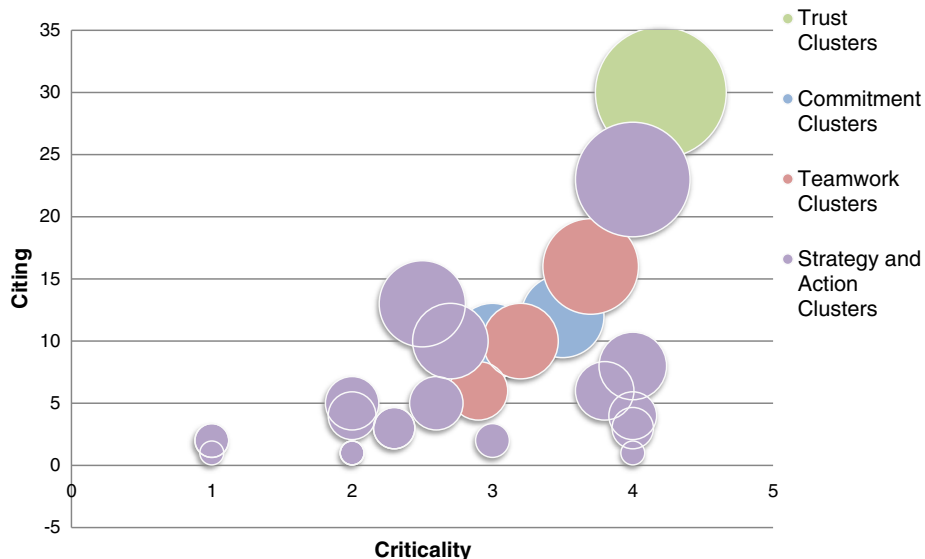


Fig. 1. Clusters of de-contextualised attributes of RQ in literature.

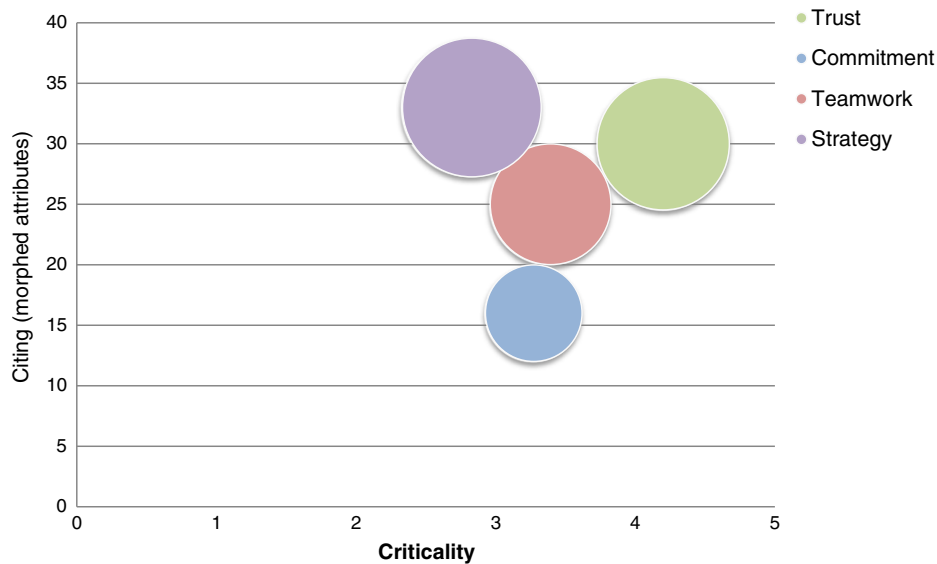


Fig. 2. Clusters of re-contextualised attributes of relationship quality.

The classification and conceptualisation of exhaustive interviews in Table 3 illustrate that construction experts also value the importance of trust for building sustainable and functional relationships in their projects. It is believed by some experts that trust has its own prerequisites and cannot exist without honesty and clear communication. Although Table 1 indicates that in theory trust is vital to any construction relationship; but the experts are sceptical about basing relationship solely on trust. From their vantage point it is not realistic and professional to base relationship on trust especially in construction projects where the nature of work is very diverse and temporary. The argument is that there is not enough time and on-going work to build trust with the other party and if there was total trust, there is no guarantee that the parties were not to change or be replaced for any reason in the next project or working arrangement. This view is to some extent in line with the earlier theoretical findings concerning fear of revocation and interpersonal trust, where trust is between the employees of the organisation and not an established inter-organisational trend (Cox and Thompson, 1997). It is suggested that if employees and organisations address their issues early, quickly, honestly, within a culture of transparency, and away from the blame culture; opportunism and self-interests are curbed hence trust is achieved on all levels of employees and organisation. This ultimate trust is believed to be the best growing field for relationship quality. Trust could be earned by the parties therefore they have some control over this attribute. Moreover, the New Engineering Contract (NEC) has tried to formalise and build a more trusting and collaborative working environment in project management. Trust is also a core ingredient in Yeung et al. (2012) relational contracting sunflower model; but as argued it cannot be and should not be forced and the parties must observe trust as a behavioural trait within their relationships. The dispute resolution and relationship management experts in general believe that trust is an organic bond between parties and often takes time, resources and a lot of effort to build-up and

be inserted into a relationship, therefore forcing trust will not work or benefit relationships. It is the development of both inter-personal and inter-organisational trust which significantly affects RQ in construction.

5.2. General and senior management commitment

Around 16 of the examined studies in Table 1 have identified segments equivalent to commitment as RQ attributes which produce average criticality of 3.27 and significance in literature of 42.11% (Ling et al., 2014; Yeung et al., 2012). Some studies discuss the commitment of senior management and believe that commitment is determined at the top level and is distributed through the hierarchy (Bennett et al., 2006; Kumaraswamy et al., 2005a). The argument is that commitment is demonstrated through the application of trust building, common goal development and clarification strategies. Ling et al. (2014) mentioned that senior levels of organisations have the definitive and more influential role in choosing and implementing these strategies. This view is shared by many others that commitment can be best enforced by corporate and senior levels of organisations (Bennett et al., 2006; Kumaraswamy et al., 2005a; Lu and Yan, 2007). Ten out of 16 identified citations have recognised commitment at senior level as a major contributing factor to RQ producing a cluster with criticality of 3 and significance in literature of 26.32% (see Table 1). Additionally a bigger cluster with 12 citing, criticality of 3.5 and significance in literature of 31.58% represents general commitment which is inflicted by devotion and actions of the project participants (see Table 1). The two clusters relating to commitment are demonstrated in Fig. 1.

Among the experts commitment is regarded as the cornerstone of building relationships in construction (see Table 3). It is mentioned that the right combination of people can make the worst documented contract work successfully; equally the poor management of the best documented contract

Table 2
Expert interviewee details.

Expert	Current position	Experience (years)	Professional Institute Associations
R1	Relationship Manager, client, consultancy and contractor	30+	ICE
R2	Project Director, client, consultancy and contractor	30+	ICE
R3	Project Manager, client	15+	IPENZ
R4	Project Director, consultancy	35+	IPENZ
R5	Technical Director, consultancy	20+	IPENZ
R6	Project Director, contractor	40+	–
R7	Chief Estimator, contractor	35+	–
R8	Contract Manager, contractor	30+	IPENZ, ICE
R9	Project Manager, consultancy and contractor	20+	IPENZ
R10	Project Manager, client, consultancy and contractor	10+	IPENZ, ICE
R11	Mediation, during and post construction	40+	AMINZ, EQC
R12	Construction law expert, adjudicator, arbitrator, mediator	40+	AMINZ, CIArb, IoD
R13	Lawyer/litigation and mediation	25+	AMINZ
R14	General commercial and business manager in construction and operations	20+	FIPENZ
R15	Adjudicator, arbitrator and mediator, quantity surveyor	35+	AMINZ, RICS
R16	Construction law expert, consultant	20+	AMINZ
R17	Adjudicator, arbitrator and mediator	15+	AMINZ
R18	Litigation and mediation expert	10+	–
R19	Adjudicator, arbitrator and mediator	30+	AMINZ
R20	Dispute resolution expert and consultant	25+	AMINZ
R21	Negotiator and mediator	25+	AMINZ

ICE: Institution of Civil Engineers.

IPENZ: Institution of Professional Engineers New Zealand.

FIPENZ: Fellow of the Institution of Professional Engineers New Zealand.

EQC: Earthquake Commission.

CIArb: Chartered Institute of Arbitrators.

IoD: Institute of Directors in New Zealand.

AMINZ: Arbitrators and Mediators Institute of New Zealand.

can result in unconstructive behaviour; twisting the relationship in a manner that it is no longer productive. This view is very much unanimous, and experts indicate that taking appropriate actions and being persistent in actions is regarded as a demonstration of commitment therefore very important to the quality of relationships. Most experts believe that people on all sides of the arrangement should be committed to a level or degree of RQ in order to make it achievable. Equally non-alignment of party's interests, element of doubt and scepticism force people to reinvent the wheel killing commitments and reducing relationship quality. [Spekman et al. \(1998\)](#) define commitment by the belief that the trading partner is willing to devote energy into sustaining the relationship. Almost in all studies corresponding to relational approaches in construction "commitment" is often regarded as a must have behavioural trait for building and maintaining good quality relationships. The CII also emphasises on long-term commitment between two or more organisations for the purpose of partnering (1991). This is strongly supported by the findings of the expert interviews documented in [Table 3](#). However the experts mention that once the goal is set for a certain level of RQ then appropriate actions and strategies such as developing personal chemistry, committing to understanding each other's view points, fairness, commitment at senior management and other levels are essential in fulfilling the initial relational goal. Thus in their view certain actions and strategies have to be emplaced to improve commitment.

5.3. Teamwork as a mixture of collaboration, communication and cooperation

From the classified literature in [Table 1](#) a total of 25 citing have identified interwoven segments of collaboration, communication, integration and teamwork as themes for relational configurations. Teamwork is de-contextualised through three different clusters (see [Fig. 1](#)). The most important of these clusters is communication which is overall the third largest cluster identified with a separate citing of 16, criticality of 3.70 and significance in literature of 42.11% (see [Table 1](#)). This is because communication and coordination problems are common and affect both performance and productivity in construction projects ([Li et al., 2000](#)). Collaboration with criticality of 3.20, 10 citing and a significance of 26.5% in literature is another important cluster of teamwork. A smaller but however significant cluster is observed for cooperation with criticality of 2.90, citing of 6 and significance of 16% in literature (see [Table 1](#)).

All the experts unanimously believe that a line of clear communication and a setting for collaboration are essential to any relationship venture. Although some see communication as a facilitator to greater RQ but overcoming unforeseen issues, resolution of problems, and completion of projects will be impaired without the feeling that there is a team effort going on. The fact that communication and collaboration will enforce teamwork is the most resonated issue in expert opinions classified in [Table 3](#). This is more emphasised than trust maybe because trust cannot be mandated or enforced through a set of

regulations but needs to be earned. Clear communication and feeling that work is performed through a team interaction can ultimately facilitate the development of trust and higher relationship quality. Conversely arrangements or contracts may have sufficient communication and collaboration links installed with great provisions but due to dogmatic views, aristocratic leadership and management no real teams could be formulated; thus relationships will crumble.

From CII's perspective effective collaboration and cooperation are key to good relational approaches such as partnering (CII, 1991). Bennett et al. (2006) realised the power of collaborative working culture in relational approaches such as partnering in construction. Chen and Chen (2007) have advocated that collaboration and team culture are a cluster of critical success factors essential to partnering success, they considered the feedback loop and two-way communication root as vital components in team development. It has to be noted that teamwork should not be mistaken with team building, teamwork resembles that collaboration, communication and ultimately cooperation should be injected into an arrangement becoming akin to the RQ of the parties; on the other hand teambuilding is the methodology and strategy of injecting these

factors. Trust and cooperation are formed with the aid of basic relational and teambuilding techniques (Kumaraswamy et al., 2005a).

5.4. Strategy and actions

In order to preserve and enhance relationships, 20 different categories of actions were identified through decontextualising literature (see Table 1); shown by smaller bubbles in Fig. 1. They have lower criticality, but in all of the literature reviewed strategies and actions have been acknowledged as facilitators or catalysts for achieving better relationships. Table 1 shows that 33 studies have mentioned some sort of activity or strategy as a means of relationship enhancement.

Table 3 demonstrates various strategies and actions mentioned by the construction experts; potentially used in development of different RQ attributes. As mentioned there is a strong feeling among experts that these attributes must be developed and built into relationships via different strategies. Therefore strategies and actions are perceived as facilitator and potential RQ enhancers and not attributes of relationship quality.

Table 3
Relationship conceptualisation through exhaustive interviews.

Positive attributes of relationship quality	Negative attributes of relationship quality	Theme of the relational determinant
Honesty, trust (cannot exist without honesty and clear communication) Trust is essential in all on-going relationship Trust is important to all relationships Trust is good Direct but honest claiming obviously tied with responses and decision making Earned trust which cannot be mandated	Not being able to address the issue quickly, honestly and openly Hiding issues with the hope that they will go away Opportunism and self-interest Indecent behaviour fraud opportunism Not being honest and transparent Opportunism	Trust and opportunism
Clear communication Communication (as a facilitators) Listening and communication skill, collaborative approach and team perspective Transparency of information Effective communication Team efforts to resolve problems	Communication issues Lack of collaboration People refuse to listen A confrontational and dogmatic environmental setting and culture	Teamwork (communication and collaboration)
Sophisticated experience of the parties Attitude, big construction players and companies have had to learn to be successful thus their experience has evolved their attitude. Performance Assuming that the parties are performing well Personality, skills to build good relations Good management and performance in situations	Rigid thinking in terms of attitude Behavioural issues and lack of connection are significant Performance issues where requirements are not met Personality there are people who are minded to be cooperative and some people who minded to wrench the last drop of money Poor management Inappropriate behaviour Turning issues to personal problems	Performance satisfaction
Understanding each other's goals and expectations Develop personal chemistry of some sort (sense of humour, trivia) Fair bargaining in profit and risk sharing Understanding and empathise with the other parties point of view, Commitment to the project is important Strong will and commitment to make things work	Non-alignment of parties' interests Element of doubt and people will try to reinvent the wheel in some way which could be harmful to relationships Uncommitted parties	Commitment through strategy
Well written contract with good provisions Vigorous selection partners specially contractors Fair and balanced contract Clear decision making, problem solving environment governed by defined processes not personal matters Win-win and sharing culture Clear framework for accountability and expectations	Unbalanced contract with disproportionate risks Harsh contract conditions Unforeseen provisions opening the way for opportunism and shortcuts Unforeseen risks and contract implications	Strategy and action

5.5. Performance satisfaction

All experts interviewed emphasised on a factor which was strongly imbedded in any relationship context; satisfaction with the other parties' performance must be perceived before the relationship can survive. Although this is demonstrated in the classification of the expert interviews in Table 3; it was not immediately detected in the literature. However a review of literature and associated conceptualisations, illustrates that satisfaction with the expertise, skills and competence of parties is an underlying factor or a latent feature of the whole relational arrangement. In fact in general satisfaction is essential to project success (Turner and Müller, 2006). The interviews revealed that attitude, personality, sufficient experience, skills, good management and performance in different situations can affect RQ in working arrangements. Instead rigid thinking attitude, requirements non-conformance, personality issues, poor management, inappropriate behaviour, turning issues to personal problems and lack of connection can all be viewed as defects in performance satisfaction and adversely affects relationship quality.

Fig. 2 is a re-contextualisation of all identified relational attributes reduced to only four major clusters. This is the overall product and amalgamation of the clusters associated to each attribute. This is performed by averaging the criticality and significance in literature measure and adding the citing associated with each attribute (see 4 columns on the right side of Table 1). Therefore for general clusters of *trust*, *commitment*, *teamwork* and *strategy and actions* are identified. However the expert interviews another “*performance satisfaction*” is also a crucial attribute of RQ which needs to be considered.

6. Relationship quality framework in construction

MacNeil (1974) regards contracts as a continuum to serve a proposed deal from fully transactional at one extreme to vertical integration at the other extreme; therefore all contracts except the fully transactional carry a relational element and the quality of relationships can determine the contracts' appropriateness and application in working arrangements. As classified in Table 1, in the absence of real relationship attributes a formulised bond should endure, therefore there is a belief that development of relationships could be engineered (Bresnen and Marshall, 2000). The interviewees from the Practical Exhaustive Investigation stage emphasised that commitment is achieved through strategies exercised by the parties. Different sides have to strategise, understand and align their goals. A certain amount of personal chemistry with appropriate trivia could be very helpful in reducing the element of doubt and enhancing commitment. The stronger the will and commitment produced by these strategies the stronger the bond and relationship quality. According to Harper and Bernold (2005) a switch from a “zero-sum” to a “win-win” business culture is inevitable and appropriate tools are required to change adversarial relationships and support this strategy. Ling and Li (2012) revealed a network of strategies essential for creating the value required for effective management of projects.

Based on this notion that RQ and its attributes can be developed through strategies; Fig. 3 offers a conceptual framework composed of the findings in the theoretical review and the practical exhaustive investigation stage. The figure from left to right demonstrates the actions and strategies which facilitate the development of main attributes and ultimately enhancement of relationship quality. Seven major strategies and corresponding actions which can be used individually or in combination with each other to achieve a certain level of RQ are illustrated. The framework initially depicts the importance of each strategy's interaction with identified RQ attributes as a means of relationship development (see Fig. 3). A full and comprehensive discussion of the framework; concerning strategies and actions in achieving fit for purpose RQ is included in this section.

The first strategy includes component actions such as respect, flexible attitude plus effective coordination of staff and resources which can ensure ethical behaviour and ultimately enhance RQ (Black et al., 2000; Cheng and Li, 2001; Drexler and Larson, 2000; Kumaraswamy et al., 2005b). These actions can also be implemented discretely without the involvement of the other party, thus they could be integrated into strategy one of the framework and named as individual and attitude modification strategy. The procurement strategy has been identified as the second strategy for enhancing relationship quality; relational contracting, long-term quality focus as opposed to the adversarial lowest price criteria, contract flexibility, experience in relational contracting are all considered as more formal strategies of conceptualising relationships (Bower, 2003; Cox and Thompson, 1997; Drexler and Larson, 2000; Meng et al., 2011). Strategy three is titled clarity and joint goal formulation. This is because consistent objectives and mutually agreed goals are much emphasised by different researchers as facilitators of RQ and often are predecessors to clarity of responsibilities and contracts (Bennett et al., 2006; Chen and Chen, 2007; Davis and Walker, 2009; Meng et al., 2011; Naoum, 2003; Ng et al., 2002; Pryke, 2009; Yeung et al., 2012).

As shown in Fig. 3, the fourth strategy is all about joint problem solving which may be possible through joint evaluation. The goal is to eliminate problems such as conflict and dispute via benchmarking and continuous improvement in order to strive towards building better relationships (Bower, 2003; Chan et al., 2003; Cheng and Li, 2001; Kedefors, 2004; Larson, 1997; Lu and Yan, 2007; Meng et al., 2011; Naoum, 2003; Pryke, 2009). The fifth strategy is embracing a culture of sharing risks/rewards and recognised joint responsibilities in fairness and equality. This ultimately will lead to a win-win situation for all parties. In this kind of culture all parties feel appreciated and cared for; hence trust is improved with increased likelihood of higher RQ (Bower, 2003; Chan et al., 2003; Ling et al., 2014; Meng et al., 2011; Palaneeswaran et al., 2003; Pryke, 2009).

Fragmentation in construction deprives the industry parties from the necessary skills to collaborate and develop good relational interactions. Therefore strategy six is about educating and training the team as an essential prerequisite of achieving a

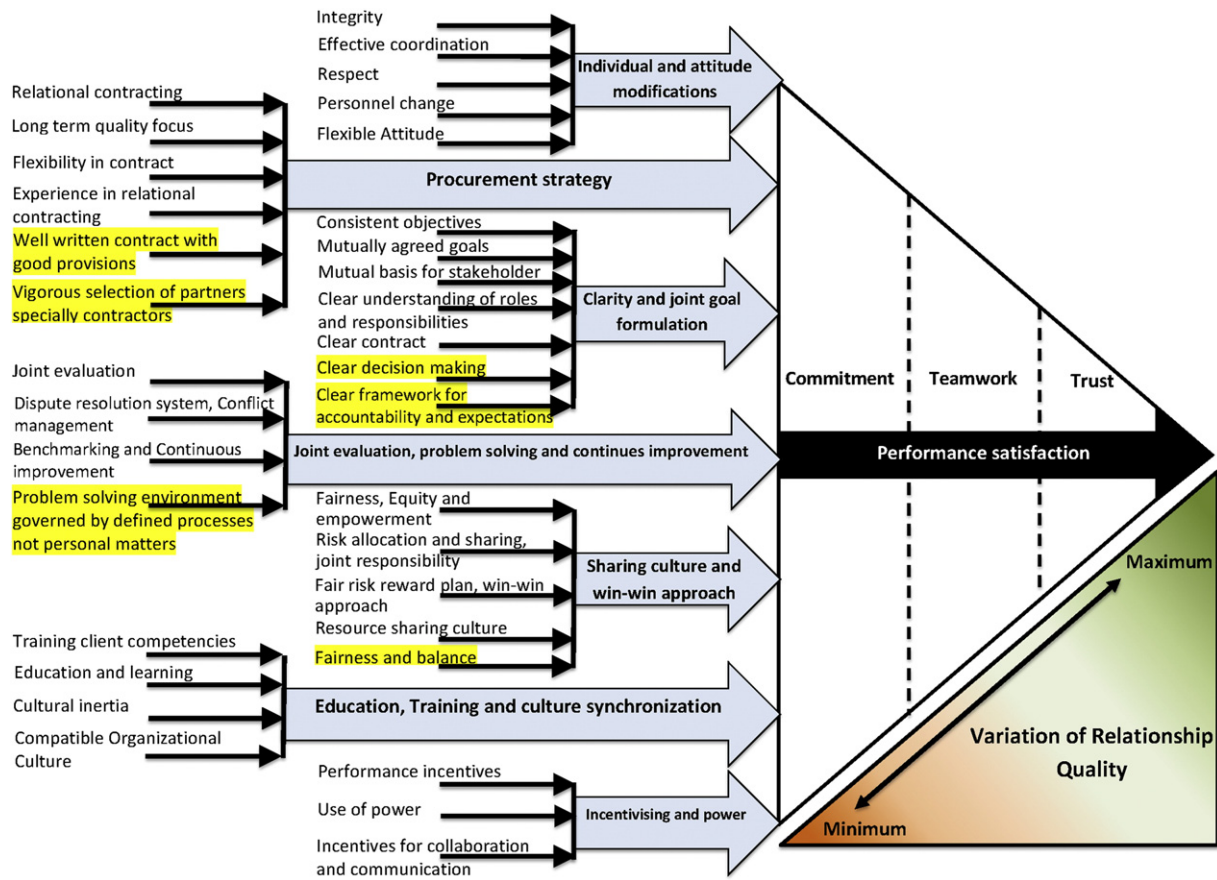


Fig. 3. Conceptual framework of RQ in project management.

compatible organisational culture for appropriate levels of RQ (Eriksson et al., 2009; Kumaraswamy et al., 2005a; Ling et al., 2014). Finally strategy seven is identified as incentivising and power. Providing incentives for performance, commitment, collaboration and teamwork are also significantly remarked as methods to improve relationships, especially where trust is not developed or lacking (see Fig. 3). Some experts have also suggested the practice of power in some circumstances to enforce relationships. Power is not a direct predictor of RQ and should not be regarded as force because when one party has power the other party has dependency exposing them to unforeseen and uncontrollable risks. Although a high amount of collaboration may be exhibited due to fear of revocation but not necessarily a high quality of relationships is achieved (Cox and Thompson, 1997). Relational bonds are a voluntary participation of parties in engaging with each other and forced relationships does not exist (Roberts et al., 2003). Power should be orchestrated in the form of creating opportunities and motivation by the stronger party for the weaker party. On the other hand the weaker party naturally does not like to deny itself of a powerful ally, thus it will have sufficient motivation to build stronger relations (Cox and Thompson, 1997; Harper and Bernold, 2005; Kadefors, 2004; Larson, 1997; Lu and Yan, 2007; Palaneeswaran et al., 2003).

However Table 3 shows that some actions are more popular in New Zealand construction culture; accordingly these are

highlighted in Fig. 3. Most of these actions in practice evolve around the legalities of the contract and procurement process. The New Zealand practitioners have suggested that a well written contract with good provisions and vigorous selection of partners can boost the attributes of RQ; these actions fall in the procurement strategy category. Fair and balanced contract was also emphasised which may fall in the sharing culture and win-win strategy; however they are certainly legality and procurement related as well. Even clear framework for accountability and expectations is procurement and contract related which demands clarity in contract. Clarity is a requirement of higher relationship quality; and an expectation of clear decision making and clear accountability exists before a relationship could enhance. Problem solving environment governed by defined processes instead of personal agenda is another important issue among New Zealand practitioners; the aim is to reduce conflicts and enforce bonds.

The framework in Fig. 3 shows trust as the ultimate relationship enforcement level which is resonated through many different studies mentioned earlier. In fact the behavioural pattern influencing relationships is to evoke mutual trust which drives social principles and acceptance of certain practices as a general strategy, to achieve relational arrangements (Ling and Tran, 2012). In some studies trust seems to be the ultimate psychological factor for building relationships (Jin and Yng Ling, 2005).

In studies such as Yeung et al., (2012)'s work core and non-core elements associated with relational approaches are established according to their significance; while others are more concerned with strategies and actions leading to success factors in relationships (Chen and Chen, 2007). However with a shift in focus the more formal relational approaches could work as possible strategies for RQ enhancement. As demonstrated some strategies make sure parties are committed to working with each other such as incentivising, and perhaps joint problem solving; in addition certain strategies are used to administer teamwork and communication such as training, education, culture synchronisation and problem solving. But all are perhaps done to build elements of trust in relationships and therefore catering for higher RQ in working relationships (see Fig. 3).

Performance satisfaction is also illustrated as the driver and glue which makes the progression of commitment to teamwork and ultimately trust is possible. Performance satisfaction is associated with the perception of the parties involved and can vary in time. This simply means that in every phase of the project there is perceived satisfaction of work performed by the other party which is not necessarily an indicator or resemblance of the ultimate project performance. The ultimate project performance is obtained based on the overall indicators of the project at the end.

7. The relationship quality levels

RQ can provide an indication of the strength and effectiveness of relationships in project management. Therefore it can be a measure to assess the appropriateness of a relationship in different circumstances. However, not all projects require the same level of relationship quality, and in order to have a relationship for a specific project condition or purpose (Cox and Thompson, 1997; Sako, 1992). some core relationship attributes have to be acknowledged, mapped and achieved through appropriate strategies and actions to achieve fit for purpose relationships (Kumaraswamy et al., 2005b). Davis and Walker (2009) have mapped out relationship development, as a central component of exchange management with five iterative phases which conceptualises the process of relationship management. Maturity models have been proposed to explain the evolution of supply chain relationships in construction, concepts or attributes such as procurement, objective alignment, trust, collaboration, communication, problem solving, risk allocation and continuous improvement in different levels of maturity, and contribute to relationship development (Meng et al., 2011). The emphasis is on a step by step approach of building relationships without making any distinctions between different strategies and attributes. However there is not a clear conceptualisation of relationship development which could correspond to RQ levels for different construction circumstances.

Fig. 4 clarifies the process of achieving fit for purpose relationships according to findings of this study; demonstrating RQ in five fundamental levels. These levels are built into working arrangements through actions, strategies and attributes

according to the relational requirements of projects. In addition Table 4 shows three different construction cases identified from the practical exhaustive investigation and expert interviews. These cases demonstrate the practical implementation of different relational process in construction projects. In this section of the discussion the cases are used to explain levels of RQ in more detail.

The lowest level of RQ is defined as the transactional level where no relational element is included and the relations are predefined and completely governed by contract provisions. In this situation the contract is adequate for all interactions and often the scope of work performed in this level of RQ is extremely limited (see Fig. 4). Supply agreements or one-off purchasing arrangements of material are examples of these transaction based relationships.

Action level is the lowest level of RQ which includes remote relational methods and actions. These relational methodologies do not follow a particular strategy and can include any of the actions depicted in the framework of Fig. 3. Contract adequacy is normally high at this level of RQ but lower than the transaction level. Case one in Table 4 specifies a client–contractor–subcontractor arrangement for a housing development project in which a joint charter was set to identify possible

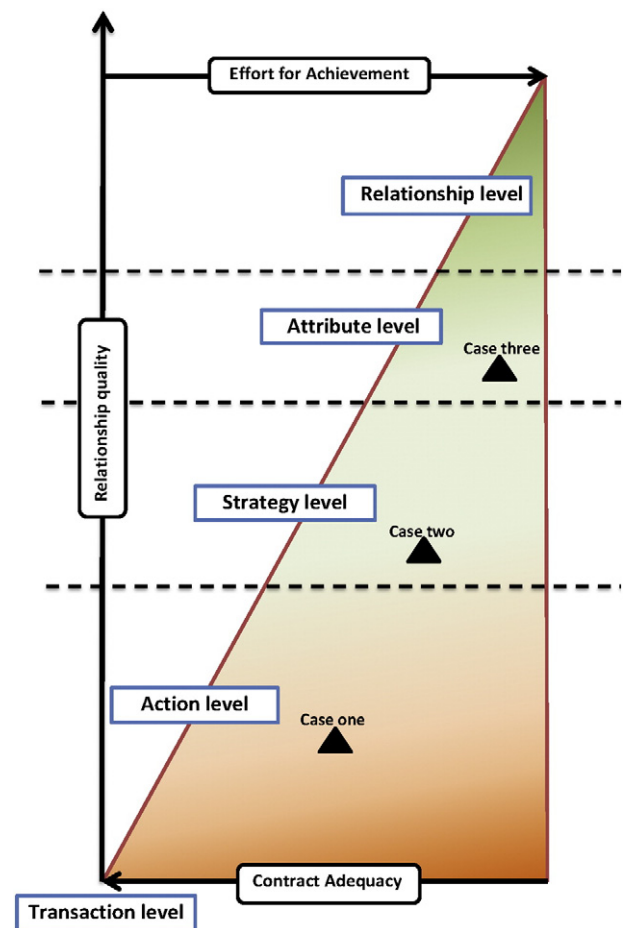


Fig. 4. The levels of relationship quality.

Table 4
Identified cases during practical exhaustive investigation.

	Case one	Case two	Case three
Description	Client and a subcontractor of a housing development project	Partnering case, land development project	Infrastructure development programme, national highway, Public Private Partnership (PPP) project
Attributes aimed			The aim is to achieve commitment and teamwork
Strategies used		The relational procurement strategy with the focus of setting clear mutual goals, training and education	Joint partnering agreement, training a shared culture, joint decision making, with using incentives, a problem solving mechanism
Actions taken	A joint charter was set to identify possible problems and also subcontractor is involved in some decision making	Vigorous partner selection process, relational contracting, mutually agreed goals, clear understanding of roles and responsibilities/joint decision making/risk allocation and sharing, joint responsibility. The risks were clearly described and shared in a risk workshop, ultimately a charter was agreed on	A partnering agreement, long term quality focus, an evaluation mechanism with benchmarking of performance, joint project charter and regular meetings, problem solving strategies, continues training plus appropriate incentives, empowerment of parties in decision making, fair risk sharing, and clarity description of roles

problems and the subcontractor was involved in some decision making processes. The effort invested for achieving a higher level of RQ is marginal and these actions can only provide limited commitment to the project and do not follow a clear relational strategy. Therefore the RQ is at an action level which is mainly contract driven with high contract adequacy as positioned in Fig. 4.

At the strategy level particular strategies are composed and followed to achieve certain relational arrangements; therefore more effort is put into achieving higher RQ compared to the action level. Contract adequacy reduces at this level and a lot of work is performed through charters and mutual agreements (see Fig. 4). For instance where the goal is commitment or better communication certain strategies are chosen and executed through corresponding actions. The scope of effort increases since potential and beneficial strategies have to be identified to fulfil the purpose of that particular project; additionally a rigorous routine of actions must be followed to enforce greater relationship quality. Case two in Table 4 demonstrates a partnering case for land development. The procurement strategy focuses on setting clear mutual goals, using training, education which is in line with the strategies identified in RQ framework (see Fig. 3). A list of actions taken to achieve these strategies and ensuring a certain level of cooperation, communication and commitment is also tabulated (see Table 4). It is obvious that the parties in this case have put more effort in achieving a higher level of RQ therefore their dependency on contractual provisions is reduced.

At attribute level a genuine intent is placed to take the relationship beyond formalities by trying to achieve the attributes such as commitment, teamwork, performance satisfaction and ultimately trust. Clearly the scope of effort becomes larger compared to the previous levels of RQ since more care and preparation are needed and certain goals have to systematically be achieved. For example in case three which is a national highway via Public Private Partnership; a level of commitment should be ensured therefore a partnering agreement is achieved (see Table 4). Certain strategies such as risk sharing, incentive regime and empowerment of the parties are imposed in the agreement. For communication and teamwork

parties decide to formulate a charter and take part in regular meetings. A demanding evaluation and a benchmarking system are also employed to ensure that performance is satisfactory. All the activities are monitored and appropriate training and education is provided to the staff and team. In this case the reliance to the contract adequacy becomes limited since there is a charter emplaced and problem solving processes are included in the agreement (see Fig. 4).

Finally for the relationship level all attributes are pursued and trust is systematically achieved. Certain strategies should be applied to ensure commitment to the agreed arrangement from all parties and with the help of appropriate actions teamwork is channelised and amplified. The parties will assess their performance all the way through to make sure they are on track and avoid underperforming, because this can be a strong deterrent of relationships. Finally if an adequate amount of time is given trust could be achieved. The progression of these attributes is the sign of ultimate RQ and is illustrated in Fig. 4 with the highest scope of effort and the lowest contract adequacy. Trust can also be obtained by acquaintance of the other parties and the belief that the other party has good intentions. The RQ achieved is rather an informal arrangement. It has to be mentioned that factors such as duration are also important in development of RQ because trust needs time to develop (Lu and Yan, 2007).

8. Conclusion

The study aims to understand the construct of RQ in managing construction projects. Initial literature reviews suggest that concepts such as trust, commitment, and teamwork based on communication and collaboration are the main attributes of RQ. In addition in a framework developed for RQ seven possible strategies were identified which could enforce these relationship attributes (see Fig. 3). These strategies are (1) *Individual and attitude modifications*, (2) *Procurement strategy*, (3) *Clarity and joint goal formulation*, (4) *Joint evaluation, problem solving and continuous improvement*, (5) *Sharing culture and win-win approach*, (6) *Education, training and culture synchronisation*, and (7)

Incentivising and power. However expert interviews with New Zealand construction professionals complemented the conceptualisations by adding the performance satisfaction attribute. These experts believed that without satisfaction of the other party's performance, achieving good quality relationships is impossible. They also regard that the lack of performance solely can be a relationship breaker regardless of other RQ attributes status. It was also presented that the construction culture is more concerned with the contractual aspects of agreements and tries to develop contractual strategies and provisions for higher RQ in different circumstances. Clarity and transparency in work and contract are also another issue emphasised by the experts. However the general trends of strategies exhibited are similar to those identified through the literature.

Finally a conceptual model that consists of different RQ levels is proposed (Fig. 4). In this conceptualisation *transaction level, action level, strategy level, attribute level and relationship level* are suggested for different RQ ranks. These levels are enhanced by the enforcement of the previously defined actions and strategies within the RQ framework (see Fig. 3), and ultimately the degree of the attribute achievement. The model demonstrates that as the level of RQ ascends from a fully transactional level to a fully relational level, contract adequacy decreases while effort of achievement increases.

The challenge of future research would possibly be to observe the practicality of such model via further and more detailed case studies. It is also important to observe RQ during significant events such as conflict and dispute which seem inevitable in complex construction projects. Furthermore ascertaining practical values for each identified attribute and strategy is essential to the best practice notion of achieving appropriate and fit for purpose RQ. Therefore a potential goal could be to empirically investigate how construction parties value and judge their RQ based on the identified attributes.

Conflict of interest

The authors certify that they have NO affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.

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