THE INFLUENCE OF TRUST ON THE
PRESCRIPTION AND PRACTICE OF
PROJECT MANAGEMENT IN
CONSTRUCTION PROJECTS
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Statement of Originality

I certify that the work embodied in this dissertation is the result of original research and has not been submitted for a higher degree to any other university or institution. The thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to the final version of my thesis being made available worldwide when deposited in the University’s Digital Repository, subject to the provisions of the Copyright Act 1968.

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ABSTRACT

Given the human interaction that is intrinsic in any construction endeavour, the desirability of trusting behaviour is clear. Practitioner interactions and eventual project outcomes are likely to be negatively impacted if issues of trust are not well understood, or at least considered. Similarly, project delivery will ultimately be more difficult than it needs to be if project managers ignore or fail to appreciate the positive influence that can follow from the exercise of trust.

Understanding the influence of trust on both the prescription of the project management role and thereafter the practice of project management during construction projects is critical in the evaluation of its benefits. The creation of a conceptual framework of trust applicable within a construction project context is described, which thereafter informs the development and implementation of a phenomenological multi-perspective, exploratory research methodology. Given that trust is a phenomenon that cannot be directly observed it is necessary to determine how it is experienced by a) the experts who prescribe the practice of project management and b) the project managers who experience trust.

Adopting an etic lens, a qualitative content analysis is undertaken of The Project Management Body of Knowledge (PMBOK). This establishes the extent to which it reflects concepts of trust and thus the extent that trust influences the prescription and practice of project management in construction projects.

The results question the reliance of project management practitioners on PMBOK and its prescription for the idealised project management process for delivering successful project outcomes, while also highlighting the disconnect between the process of project management (as mandated by PMBOK) and the practice of project management in maximising the likelihood of project success.

Adopting an emic lens, a phenomenological interview study is undertaken in order to examine the influence of trust on the practice of project management in construction projects, with attention given to the contextual specifics of respective transactional and relational approaches. Despite the contrasting principles underlying each approach, experiences of trust are found to be similar under both, where choice of procurement mechanism is found to be of relative insignificance compared to other influences.
The individual attitudes of project participants are shown to be critically influential, emphasising the importance of project team member selection. The appropriate allocation of risk is shown to be significant, with low trust levels, and sub optimal project outcomes resulting when risk is poorly apportioned.

Importantly, and counter intuitively, the certainty of risk apportionment and reward inherent under relational contracting conditions is found to remove the need for trust altogether once risk allocation has been negotiated. Where this is subsequently perceived to have resulted in an asymmetric risk distribution, feelings of misplaced trust predominate.
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The publications included within this thesis have been completed in conjunction with research supervisors, and co-authors. Details regarding the nature and extent of the intellectual input of the respective publications, including the candidate's contribution is included as required within chapter 4.
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1 INTRODUCTION

1.1 Background to research
The human interactions required in any organisation or project setting intrinsically require trust (1999). To this end, within a project management context founded on both technical and human dimensions (Cooke-Davies and Arzymanow, 2003), the evidence is clear that trust is important (Romahn and Hartman, 1999, Gad and Shane, 2014, Cheung et al., 2015). A failure for project governance mechanisms to accommodate trust and its dimensions is therefore likely to have a negative influence on practitioner interactions, and eventual project outcomes. In the same way, if project managers neglect or fail to appreciate the positive influence that trust can have on project outcomes, project delivery will ultimately and necessarily be more difficult than it needs to be.

Project management has provided the point of departure for this research, both as a mechanistic prescription for action and as an inherently human activity, and it is in this context that the concept of trust was subsequently considered.

The potential absence of trusting behaviour is inherent within any construction endeavour, and there exist many projects whereby trust is conspicuously lacking (Cheung et al., 2015, Challender et al., 2014). Furthermore, given the complex nature of many projects, the inherent risks involved, and the contractual frameworks governing trading partner relationships, an adversarial rather than trusting culture is often the default position (Cheung et al., 2015, Chow et al., 2012, Hasanzadeh et al., 2016, Lau and Rowlinson, 2011, Wong et al., 2008). In an industry where trusting behaviours are not necessarily commonly
encountered, a greater understanding amongst project participants regarding the unexpected advantages of trust and trusting behaviour – even without contractual obligations – would improve project performance and eventual project outcomes, including both cost and non-cost factors. Ultimately, there has been limited attention given to trust in a project management context (Maurer, 2010), and the construction sector in general terms often remains reluctant to embrace trust and its benefits, while continuing to demonstrate a lack of understanding in this regard (Fawcett et al., 2012).

The issue of risk apportionment is another key consideration regarding trust in a construction project context. In order for trust to emerge, one party in a relationship must accept a degree of risk (Deutsch, 1958), and in instances where risks are unfairly allocated and loaded for one project participant to fail, it is not surprising that trust is absent. Implicit therefore when considering trust within a construction project environment, is the notion that the exercise of trust – both as trustor and trustee – unavoidably requires parties to step outside the comparative comfort of contractually defined behaviours, exposing the trustor to heightened levels of risk, in the expectation of favourable treatment by the trustee, and vice versa.

While trust at an organisational level is significant during the initial contractual negotiations of any project, once a project commences it is essentially at a personal level, between respective project individuals, where trust functions. On one hand there exists the informal application of trust on an individual case-by-case basis, whereby individual personalities and attitudes directly determine issues of trust. While conversely, the formal prescription of project management best practice – e.g. the Project Management Body of Knowledge (PMBOK) – which attempts to mandate project management processes, similarly influences stakeholder interactions and behaviours, and henceforth also influences issues of trust. It therefore stands to reason that there exists some interconnection between these respective formal and informal applications of trust. While prescribed best practice can mandate project processes in a linear and mechanical manner, it cannot similarly control the human element in any relationship interaction. This research therefore aims to examine and explain the interconnection between the informal and formal application of trust as experienced within a construction project environment.

The response of the industry to this exercise of trust, and the nexus between formal and informal applications, essentially lies within the respective contractual approaches governing any project endeavour. To this end, procurement mechanisms provide the framework under
which contracting parties operate, and given the divergent principles upon which respective transactional or relational contract mechanisms are founded, it would be reasonable to expect similarly divergent experiences when considering matters of trust. This research therefore aims to provide understanding in this regard.

In reviewing existing literature, it is apparent that the topic of trust has been widely examined. Within the context of project management, available literature raises questions as to how current project management practices are influenced by trust when undertaking any construction endeavour. The human dimension of project management is therefore logically central in this regard.

Given that the technical dimension of project management is also deemed fundamental within a project management framework (Cooke-Davies and Arzymanow, 2003), it must also be considered in any investigation of trust and its influence. To this end, the respective procurement mechanisms which command stakeholder behaviour are likely to be significant, as they ultimately define the boundaries within which contracting parties must operate, while also establishing how risk is to be allocated and managed. In this regard, risk and trust are inherently linked. Risk is a fundamental ingredient for trust (Deutsch, 1958), and in order for trust to transpire, one party to a relationship must accept some degree of risk. Hence, trust can be considered an informal risk management and transfer mechanism within a project environment. The contextual specifics and underlying principles of the various procurement alternatives utilised in the delivery of construction projects are therefore considered important. Contract administration literature suggests that traditional transaction-based procurement presents a number of shortcomings which may hinder the development of trust between contracting parties. Consequently, relational procurement mechanisms were developed in an attempt to mitigate these failings, and in principle these alternate procurement mechanisms should be more conducive to the development and maintenance of good relationships and trust. The respective procurement mechanism utilised within in any construction endeavour is therefore a fundamental consideration within the context of this study.

Similarly, accepted standards that prescribe project management practice within a construction management environment are also likely to be of great consequence in terms of stakeholder behaviour. In this regard, standards for project management mandate how projects are to be managed, and therefore would logically influence interactions between
construction practitioners. Consequently, any investigation of trust needs to consider not only the practice of project management, but also the fundamentals on which best practice is prescribed. To this end, PMBOK has been identified, and is considered to be a widely accepted and utilised prescription of project management best practice. Given that existing literature identifies trust as a key lubricant for project success (Kramer, 1999, Pinto et al., 2008, Wicks et al., 1999), an understanding of trust in this regard should be widely understood and considered within the context of project management. Hence, it makes sense that PMBOK, a ubiquitous standard that aims to provide the recipe for successful project management, should consider trust and its influence in terms of building trust, maintaining trust, and repairing lost trust. This research will investigate if this is indeed the case.

In attempting to structure an investigation pertaining to the influence of trust on the prescription and practice of project management in construction projects, the human and technical dimensions, as well as the interactions between the two, must therefore be considered. Within this framework, the idea that trust is essentially a personal phenomenon that is experienced at a personal level is seemingly at odds with the precepts of PMBOK as a template for the process and subsequent practice of project management. Consequently, the correlation between the human and technical dimensions of project management is deemed significant, and will be central to the development and implementation of the adopted methodology central to this research.

1.2 Conceptualisation of the research problem
This research ultimately aims to examine the ontology of trust within a construction management context. That is, this research will investigate the nature of trust and how it exists and is experienced within a construction project environment. With trust and its dimensions fundamentally entwined within emotional and human interactions, the social reality of trust, or the phenomenon that is trust, is primarily what needs to be investigated. To this end, any attempt to gain an understanding of this social reality must be founded on the experiences of those who live it (Gray, 2014). Consequently, the lived experiences of construction practitioners and in particular the dyadic relationships that exist in situ within construction project undertakings, are considered vital within the context of this study.

Furthermore, given that accepted standards for project management prescription (i.e. PMBOK) aim to inform the best practice processes for successful project delivery, any
investigation of trust within the context of practitioner experiences must logically also examine the standards upon which best practice is founded. Hence, an examination of PMBOK in terms of trust and its influence is fundamental to this research.

In investigating the lived experiences of construction practitioners, the human, technical and socio-technical dimensions are considered relevant. The human dimension, demonstrated via the psychological construct of trust revealed by individuals, is understandably important regarding trust and the dimensions of trust, which are fundamental to this research. The technical dimension is comprised of accepted project management standards, which prescribe best practice, as well as the particular legal prescriptions for alternate procurement methods based upon transactional and relational principles which mandate the specific remedies available to individual stakeholders. The socio-technical dimension is concerned with the interaction between the human and technical dimensions, and is influenced by the project context e.g. risk, control mechanism, etc.

Consequently, the research question, and subsequent aims and objectives will be defined and developed in order to examine the extent to which:

1. trust concepts are embedded into the practice of project management, as defined by PMBOK (project management prescription);
2. trust concepts influence the practice of project management, as experienced by practitioners in construction projects;
3. procurement mechanisms influence the experience of trust within trading dyads working on construction projects.

An understanding regarding the ontology of trust as it exists in construction projects will ultimately be gained, specifically the extent to which the human experience of trusting another person can be attributed to mandated processes as opposed to simply the benevolent behaviour of individuals.

In broad terms, this research will firstly determine what existing literature has to say regarding trust, both in general terms as applicable within a construction project management context, as well as in relation to contract administration via the procurement mechanisms utilised within the Architecture, Engineering and Construction (AEC) sector. Via a dedicated and structured literature review, key themes pertaining to trust and dimensions of trust will be established and considered within the context of the identified research problem. The extant
literature will ultimately facilitate the conception of a comprehensive trust framework, with this trust model integral to the subsequent development and application of an appropriate research methodology. In responding to the defined research question, aims and objectives, the methodology will endeavour to examine the influence of trust within the context of project management prescription as well as practice. To this end, an etic lens (view from the outside) is proposed to explore a generic prescription of project management processes – PMBOK – with consideration to trust and its influence. While an emic perspective (view from within) is proposed to investigate the lived experiences of construction practitioners regarding trust-related concepts under various procurement alternatives. Subsequently, the methodological design will take the form of two distinct parts, based on the respective etic and emic perspectives outlined herein. A qualitative content analysis methodology based on the etic approach will utilise the developed trust framework to examine PMBOK. While a phenomenological interview methodology based on the emic approach will utilise the developed trust framework to examine the lived experiences of construction practitioners operating within construction projects delivered under various procurement mechanisms.

In responding to the defined problem, analysis and discussion of the research results will in essence identify the influence of trust on project management prescription and practice. A diagrammatical overview of the conceptual model that underpins this study is included in Figure 1.1.
Figure 1.1: Conceptual model
1.3 Research design considerations

The background to this research along with the adopted definitions has influenced the conception of the research problem, and subsequent methodological considerations. While trust and trust based relationships are often linked with successful project outcomes (Kramer, 1999, Pinto et al., 2008, Wicks et al., 1999, Gad and Shane, 2014), there exists little research in terms of the influence of trust on the prescription or practice of project management in construction projects. It is this pretence that has driven the identification and development of the research problem central to this study.

The definition adopted for this research distinguishes trust as a psychological state rather than a behaviour, and is concerned with the intentions and expectations of one individual towards another. The inability to directly observe trust (Grix, 2002) between individuals is therefore significant. While direct observation may indeed offer instances where it would be seemingly reasonable to deduce whether trust does or does not exist, such conclusions cannot possibly be reliable. For example, a respective stakeholder may appear to be acting in a manner that displays trust towards another party, with a trusting response similarly evident. However, such a display of seemingly trusting behaviour may be driven by a non-trusting motive, which is not readily observable. Such a motive may not come to light until a later date, or equally, it may never become apparent. With trust and its dimensions fundamentally concerned with the psychological interactions between individuals, observation via a third party can be based only on perception, rather than any definitive reality. Hence, any study aiming to examine the influence of trust within a construction project environment must be predicated on this understanding. Furthermore, it is the view of the researcher that knowledge in this regard cannot be reliably obtained through cognitive responses to enquiries of trust (Grix, 2002), but instead that trust is influenced by and adheres in contextually specific social structures, with the relations between people operating within these contextual specifics being critical to any analysis (Grix, 2002, Coleman, 1988, Maloney et al., 2000).

The inability to reliably observe trust, as well as the contextual boundaries and influences pertinent to a construction management environment, are therefore key considerations within the design of this study.
With this in mind, in terms of investigating the influence of trust on the practice of project management via the lived experiences of construction practitioners, an etic approach on the part of the researcher is deemed to be inappropriate. That is, given that it is not possible to reliably observe trust within project participant interactions, an ethnographic type study would not yield reliable results. Thus, an emic approach is required, and the methodological design of this component of the research will be constructed based on a phenomenological interview study, which will ultimately yield results founded on the lived experiences of construction practitioners. While the imperceptible nature of trust would be similarly apparent between project participants when they interact, their perceptions of trust are real in terms of their respective experiences, and hence provide a valuable and valid insight into the influence of trust within a construction project context.

However, in terms of investigating the influence of trust on the prescription of project management practices via an accepted standard for project management processes (PMBOK), the etic method is deemed to be appropriate. Hence, this component of the research will be developed and applied based on a qualitative content analysis, which will use an etic lens to examine and explain trust-related traits as applicable.

1.4 Research problem and research question

1.4.1 Research question
How does trust influence the prescription and practice of project management in construction projects?

1.4.2 Research aim
To explain how trust influences the prescription and practice of project management in construction projects.

1.4.3 Research objectives
1. To construct a generic conceptual framework/model of trust, trust failure and trust repair.
2. To identify the theoretical influence of trust upon contract administration through procurement mechanisms.
3. To construct a methodology based upon a philosophical stance that regards the experience of trust within a construction project as an imperceptible phenomenon:
   a. traditional literature review (conceptual framework).
   b. content analysis – analysis of PMBOK (Etic perspective).
   c. phenomenological thematic analysis (Emic perspective):
      i. confirmatory (existence of previously identified themes);
      ii. open (identification of new themes).

4. To introduce and present six papers (six published).

5. To discuss and present conclusions based upon this study, including implications for future research.

1.5 Scope and working definitions

1.5.1 Trust
Any human interaction is primarily reliant on trust (Romahn and Hartman, 1999), and within the context of human behaviour, the value of trust is widely acknowledged (Bigley and Pearce, 1998, Cheung et al., 2015).

In reviewing previous trust literature, it is apparent that there exists a diverse range of definitions and models of trust. A resultant degree of ambiguity is therefore evident when considering trust between disciplinary boundaries, however, the significance of trust and its subsequent benefits is none the less broadly acknowledged (Romahn and Hartman, 1999, Gad and Shane, 2014, Cheung et al., 2015).

This research has adopted the definition of trust as provided by Rosseau et al. (1998, p. 395): “Trust is a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviour of another”.

Therefore, the acknowledgement of trust as a psychological condition reveals that trust is not a behaviour per se, nor is it the equivalent of co-operation. A co-operative relationship does not inherently require trust, and compliance as a behaviour should not be misinterpreted as evidence of trust. To this end, cooperation may be founded on contractual obligations, and encouraged by sanctions or other coercive measures (Kadefors, 2004, Pinto et al., 2008, Gad...
and Shane, 2014). With reference to the definition of trust central to this research, the distinction between cooperation and trust is deemed significant.

1.5.2 Projects

It has been said that a project's deliverables are principally reliant upon people to do the work (Lechler, 1998). It has also been said that trust is "the lubrication that makes it possible for organisations to work" (Romahn and Hartman, 1999). Given that projects are undertaken by organisations of one sort or another it can be seen that trust and the project context are intrinsically linked.

This research adopts the definition of a project provided by the Project Management Institute (PMI) (2008, p.5), namely, "a project is a temporary endeavour undertaken to create a unique product, service or result".

These fundamental principles of a project are considered significant in terms of trust and its influence within a project environment.

1.5.3 Project management

The delivery of organisational outcomes is becoming increasingly reliant on project management principles and practices (Milosevic, 2003), with project processes organised as required in order to realise objectives of scope, cost and time (PMI, 2008, Turner and Muller, 2005). By way of managing competing project constraints, project management ultimately to get things done (Brown, 2007, PMI, 2008).

Historically, principles of project management are recognisable in significant projects as far back as The Pyramids of Egypt and The Great Wall of China. While in modern terms, the field of project management “developed in a limited number of engineering based industries in the 50’s 60’s and 70’s” (Cooke-Davies and Arzymanow, 2003, p. 471). Project work is now increasingly adopted across a broad range of industries (Lundin and Stablein, 2000).

In terms of the principles upon which project management functions are founded, Cook-Davies and Arzymanow (2003, p.472) propose that:

“Every aspect of project management has two dimensions – a technical dimension and a human dimension. The technical dimension encompasses those groups of practices or processes that are integral to project management, while the human dimension includes not only the people who are operating these processes, but their expertise”.
This research recognises the multiple definitions of project management that exist in previous literature, however has adopted the definition of Project Management as provided by the PMI (2008, p.6):

“Project Management is the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements”.

This definition is considered appropriate given that it is fundamental to accepted project management best practice, as defined by an internationally recognised standard for project management, The Project Management Body of Knowledge (PMBOK).

1.5.4 Project management prescription
For the purpose of this research, the term prescription refers to a suggested method, direction, measure, recommendation, or formula which describes the process of doing something, or making something happen (Merriam-Webster, n.d.). That is, the process(s) of project management in the delivery of construction projects. The definition provided by Merriam-Webster (n.d.) has been adopted:

“the action of laying down authoritative rules or directions”.

1.5.5 The Project Management Body of Knowledge
The Project Management Body of Knowledge (PMBOK) is an American National Standard approved by the American National Standards Institute. With distribution totalling over two million copies (PMI, 2009), PMBOK is put together via the collaborative efforts of a “global network of project management practitioners, working as volunteers” (Crawford, 2000, n.p.). It therefore has proven international applicability and acceptance. Published by the Project Management Institute (PMI), this standard for project management aims to:

“Improve the understanding and practice of project management by identifying, defining, documenting and championing generally accepted project management practices and a common project management lexicon” (PMI, 2009, n.p.).

It is acknowledged that there are some within the project management community who are critical of PMBOK and its linear, mechanical methodology (Bourne and Walker, 2004, Gale and Brown, 2003, Zwikael and Bar-Yoseph, 2004), however, for the purpose of this research it is considered to be a widely utilised resource of reference for project management best practice.
According to PMBOK, the fundamentals of project management practice can be categorised within 42 project management processes, founded on nine knowledge management areas. These include integration, scope, time, cost, quality, human resources, communications, risk, and procurement. Consequently, project management processes are segregated into five groups which include initiation, planning, executing, monitoring and controlling, and closing (PMI, 2008). In investigating trust within a construction management context, the prescription of project management practice as described by PMBOK will be central to this study.

1.5.6 Project management practice
For the purpose of this research, the term practice refers to doing something regularly or constantly, and as a matter of routine in everyday life. That is, the habitual or customary application or performance of project management in the delivery of construction projects (Merriam-Webster, n.d., Oxford-Dictionary, n.d.). The definition provided by Oxford Dictionary (n.d.) has been adopted:

“the actual application or use of an idea, belief, or method, as opposed to theories relating to it”.

1.5.7 Construction procurement
There exists numerous definitions of procurement which are applicable within a construction project context (McDermott, 1999). Moshini and Davidson (1989, p.86) define procurement as:

"the acquisition of new buildings, or space within buildings, either by directly buying, renting, or leasing from the open market, or by designing and building the facility to meet a specific need".

Lenard and Moshini (1998, p.79) provide the following definition of procurement:

"a strategy to satisfy the client's development and/or operational needs with respect to the provision of constructed facilities for a discrete lifestyle".

For the purpose of this research, procurement essentially refers to the framework within which construction projects are obtained (McDermott, 1999), and in particular the legal frameworks that underpin the construction management and delivery of any construction
endeavour. To this end, this research has categorised procurement under transactional or relation-based alternatives.

Transaction-based procurement, or traditional procurement, essentially embraces a fully prescribed contractual arrangement in order to govern the exchange of goods and services between client and contractor in the delivery of a construction project. Commonly utilised examples of transactional procurement include traditional lump sum, or design and construct contracts (Challender et al., 2014, Rowlinson and Cheung, 2002).


The subsequent literature review which is fundamental to this research will be guided by the respective transactional and relational procurement categories, with the divergent theoretical principles which underpin these procurement alternatives fundamental in this regard.

1.5.8 Lived experience

In striving to shed light on the ontology of trust as a phenomenon, and how it exists within a construction project environment, understanding must be founded on the experiences of those who live it (Gray, 2014). Hence, the lived experiences of suitably qualified and knowledgeable construction practitioners are deemed to be significant, and will provide a valuable and valid insight into the influence of trust within a construction project context.

For the purpose of this study, the definition of lived experience as provided by Patton (2002, p. 104) is to be adopted, with his theoretical principles guiding the subsequent development and implementation of the methodology upon which this research is founded. Patton defines lived experience as follows:

“how people experience some phenomenon – how they perceive it, describe it, feel about it, judge it, remember it, make sense of it, and talk about it with others. To gather such data, one must undertake in-depth interviews with people who have directly experienced the phenomenon of interest; that is, they have ‘lived experience’ as apposed to second-hand experience”.

1.6 Conclusion
When considering the human element which is fundamental to any project endeavour, the
concept of trust is logically significant, and a lack of understanding in this regard is likely to
negatively impact stakeholder relationships and eventual project outcomes. Hence, this
chapter has identified a research problem that exists within the construction industry. The
subsequent conceptualisation of the problem aims to shed light on the ontology of trust within
this context, and unlock potential benefits in terms of the prescription and practice of project
management in the delivery of construction projects.

With the stated research question, aims and objectives providing the foundations for this
research, each step of the proposed methodology has been clearly articulated and justified.
To this end, the influence of trust on the practice of project management will be examined
from an emic perspective via the lived experiences of practitioners, in the form of a
phenomenological interview-based study. In addition, the influence of trust on the
prescription of project management will be examined from an etic perspective, via a
qualitative content analysis of an international recognised and utilised standard for project
management best practice, PMBOK. Further elaboration regarding the adopted methodology
will be provided in Chapter 3. Informed by the overall research process as delineated in the
developed conceptual model, the scope and limitations of the research have also been
explained, with working definitions similarly provided.
2 LITERATURE REVIEW

2.1 Introduction
Via a dedicated and structured review of available and relevant literature from a wide range of appropriate resources, the proposed literature review will be fundamental to this research undertaking. A critical assessment and summary of literature pertinent to the research topic will assist in locating the proposed study, while also forming its context and background, and highlighting previous work (Baxter et al., 1996, Kumar, 1996). In essence, the proposed literature review will serve three main functions.

1. Firstly, it will bring clarification and detail to the research concepts, and highlight gaps that exist in current knowledge.
2. Secondly, the literature review will inform the development of an appropriate methodology. Previously applied methodologies will be valuable in this regard, and will help to develop and implement research tools that have been proven to provide valid and robust outcomes.
3. Thirdly, and most importantly, a wide-ranging and critical review of available literature will extend the existing level of understanding on which this research will build. To this end, a greater appreciation of the research area and germane issues will be attained. Furthermore, by presenting sufficient coherent and empirical evidence by means of the literature review, the validity of the conclusions reached will be strengthened (Barron, 2006, Rudestam et al., 2001).
In remaining true to theoretical perspectives underpinning this research, an interpretive mechanism for reviewing the selected literature will be embraced. This qualitative approach will deliver a holistic representation of pertinent themes within a construction management context. To this end, individual interpretations derived from prior understanding and experience (Dahlberg et al., 2008, Lopez and Willis, 2004) on the part of the reviewer are central (Eisenhart, 1998, Schwandt, 1998b), with these interpretations further guiding the research problem, and the subsequent methodological design and application in the pursuit of meaningful outcomes (Lopez and Willis, 2004).

This literature review will be undertaken in two designated sections, focusing firstly on trust, and secondly on construction procurement.

As a consequence of Part One of the literature review, a detailed framework of trust concepts will be developed, with this framework central to the subsequent development and application of the adopted research methodology. This framework will ultimately provide a detailed account of accepted knowledge regarding trust and the dimensions of trust applicable within the context of construction project delivery.

Part Two of the literature review will examine construction procurement generally, and then in detail regarding the respective transactional, relational and Alliancing procurement alternatives, within the context of trust and its influence in the delivery of construction projects. This literature will enhance the understanding on which the research is founded, and subsequently guide the development and implementation of the adopted research methodology.

2.2 Part One – Trust

2.2.1 Conceptualising trust
When considering the development of a new framework of trust founded on literature, previous models that conceptualise the various forms and categories of trust provide a valuable resource. To this end, the abundance of varying trust models (Guo et al., 2013) has led to some conjecture regarding a universal model of trust (Hartman, 1999, Mayer et al., 1995). Furthermore, a multitude of trust definitions (Challender et al., 2014) has resulted in ambiguity, with trust models generally developed according to the respective research discipline and the adopted definition. Therefore, it is apparent that there is no single model of
trust that can be universally applied across disciplinary boundaries (Romahn and Hartman, 1999), and in this regard, the subjective nature of trust also presents obvious limitations (Becerra et al., 2001).

In terms of previous trust models, general literature, along with the management discipline, has provided the focus of the literature review central to this study. It is acknowledged that other valid models of trust do indeed exist (Kramer, 1999, Lewis and Weigert, 1985, Luhmann, 1979, McAllister, 1995), however for the purpose of this research endeavour these have not formed part of this literature review.

Table 2.1 presents a limited overview of trust classifications as presented in previous literature. While the respective models of trust each provide a valid explanation of various trust-related situations and themes (Romahn and Hartman, 1999), a review in this regard provides further support to the idea that there is no single model of trust that has universal applicability across disciplinary boundaries. Hence, within the context of this research undertaking, a review of the trust models presented has aimed to identify aspects or themes of trust that exist in a number of models. This will subsequently allow the development of a new, and construction-context-specific framework of trust themes that will satisfy the objectives of this research.

The reviewed models of trust have identified a number of common themes and dimensions that are considered to be significant and influential: uncertainty, risk, expectation and vulnerability (Romahn and Hartman, 1999); relationships and ongoing interactions; the temporary and unique characteristics of a project; control mechanisms; individual competence; and human elements of trustworthiness including actions and behaviours that facilitate trust. Within the context of a project environment, these recurring themes of trust will be explored further throughout the remainder of this literature review. Factors pertaining to trust building and repair will also be explored.
Table 2.1 Dimensions of trust as identified by previous trust models

<table>
<thead>
<tr>
<th>Author and year</th>
<th>Dimensions of trust</th>
</tr>
</thead>
</table>
| (Blau, 1964)    | Beneficial exchanges between parties;  
                    Relationships founded on collaboration and cooperation;  
                    Reciprocal benefits. |
| (Rotter, 1967)  | Focus on the trustor (the party placing trust in another party). Describe and define trust as:  
                    A character trait; a propensity to take risk; expectations and beliefs, influenced by social background, experiences and cultural values. |
| (Farris et al., 1973) |  
| (Mayer et al., 1995) |  
| (Fukuyama, 1997) |  
| (Butler, 1991)  | Focus on the trustee (the party that the trust is placed upon). Try to identify a trustworthy party and establish and measure required attributes. Important components of trust identified include:  
                    Integrity, honesty, reliability, consistent behaviour, competence, fairness, loyalty, openness. |
| (Gabarro, 1978) |  
| (Barney and Hansen, 1994) | Different levels of trust (weak, semi-strong and strong) for relationships with different levels of opportunity for opportunism, and different levels of vulnerability. |
| (Shapiro et al., 1992) | Trust is distinguished according to the source of the trustor’s confidence.  
                    Deterrence-based trust (relies on penalties for non-conformance); |
<table>
<thead>
<tr>
<th>Source</th>
<th>Types of Trust</th>
</tr>
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<tbody>
<tr>
<td><strong>(Lewicki and Bunker, 1996)</strong></td>
<td>Knowledge-based trust (relies on previous experience);</td>
</tr>
<tr>
<td></td>
<td>Identification-based trust (relies on a common understanding and emotional connection).</td>
</tr>
<tr>
<td></td>
<td>Trust differentiated with consideration to the parties involved.</td>
</tr>
<tr>
<td></td>
<td>Deterrence-based trust (parties can be trusted to keep their word in order to avoid penalties for violation);</td>
</tr>
<tr>
<td></td>
<td>Knowledge-based trust (familiarity of parties is such that their behaviour towards each other is predictable);</td>
</tr>
<tr>
<td></td>
<td>Identification-based trust (a common understanding is developed to the point where the parties can take action on behalf of one another).</td>
</tr>
<tr>
<td><strong>(Hartman, 1999)</strong></td>
<td>Integrity trust (belief that one party will guard the interests of another party);</td>
</tr>
<tr>
<td></td>
<td>Competence trust (belief that the other party is competent to perform the work assigned);</td>
</tr>
<tr>
<td></td>
<td>Intuitive trust (one party can trust the other party based on an emotional ‘gut feeling’).</td>
</tr>
<tr>
<td><strong>(Rosseau et al., 1998)</strong></td>
<td>Calculus-based trust (motivated by self interest or financial incentive);</td>
</tr>
<tr>
<td></td>
<td>Relational trust (as a result of repeated, direct interactions, a comfort level is reached between the parties);</td>
</tr>
<tr>
<td></td>
<td>Institution-based trust (facilitated by legal institutions, and cultural and social norms).</td>
</tr>
<tr>
<td><strong>(Whiteley et al., 1998)</strong></td>
<td>Relationships, communication, benevolence, honesty, integrity, reliability.</td>
</tr>
<tr>
<td><strong>(Yeung et al., 2007)</strong></td>
<td></td>
</tr>
<tr>
<td>Source</td>
<td>Types of trust:</td>
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<tr>
<td>--------</td>
<td>----------------</td>
</tr>
<tr>
<td>(Wong et al., 2008)</td>
<td>Cognition-based trust founded on competence:</td>
</tr>
<tr>
<td></td>
<td>Affect-based trust founded on personal relationships;</td>
</tr>
<tr>
<td></td>
<td>System-based trust founded on formal processes and procedures, and contractual arrangements that mould and develop organisational relationships.</td>
</tr>
<tr>
<td>(Parayitam and Dooley, 2009)</td>
<td>Cognition-based trust founded on competence:</td>
</tr>
<tr>
<td></td>
<td>Affect-based trust founded on personal relationships.</td>
</tr>
<tr>
<td>(Chow et al., 2012)</td>
<td>Categories and operations of trust:</td>
</tr>
<tr>
<td></td>
<td>Interpersonal trust; intergroup trust; inter-organisational trust.</td>
</tr>
<tr>
<td>(Fawcett et al., 2012)</td>
<td>Types of trust:</td>
</tr>
<tr>
<td></td>
<td>Interpersonal trust; firm-based trust; supply chain trust.</td>
</tr>
<tr>
<td></td>
<td>Founded on benevolence and capacity.</td>
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<tr>
<td></td>
<td>Trust maturity framework:</td>
</tr>
<tr>
<td></td>
<td>Stage 1- Limited trust;</td>
</tr>
<tr>
<td></td>
<td>Stage 2- Transactional trust;</td>
</tr>
</tbody>
</table>
| Stage 3- Relational trust;  
| Stage 4- Collaborative trust.  
| (Gad and Shane, 2014)  
| Trust types  
| Factors affecting trust development;  
| Trust and project success;  
| Contracts and trust;  
| Project cost and trust;  
| Delivery methods and trust.  

2.2.2 Risk, vulnerability and uncertainty

Matters of risk, vulnerability and uncertainty are universally important when considering trust, and within the context of this research, these terms are deemed to be interchangeable. Risk can be expressed as the perceived potential for loss (Chiles and McMackin, 1996), and in any given situation, in order for trust to eventuate, risk must be present (Deutsch, 1958, Ceric, 2014, Ceric, 2016). The link between risk and trust is also acknowledged by Becerra et al. (2000, n.p.), who identify risk as an essential component of trust:

“Risk is inherent in the behavioural manifestation of the willingness to be vulnerable. Trust will lead to risk taking in a relationship, and the form of the risk taking depends on the situation”.

Ultimately, the existence of uncertainty or risk in any situation facilitates the opportunity for trust (Rosseau et al., 1998), as without some degree of uncertainty, a decision to trust, or not trust, does not need to be made by the trustor. Trust cannot therefore transpire without one party agreeing to accept a degree of risk (Chow et al., 2012, Schoorman et al., 2007). To this end, of significance also is the fact that any potential gains forthcoming from the acceptance of risk in any exchange relationship will be forfeited if a party chooses not to trust (Romahn and Hartman, 1999, Whitener et al., 1998, Gad and Shane, 2014).

Considering the unique nature of any given project, the contextual specifics of the project environment ensure that uncertainty and risk are inevitable (Schwalbe, 2004, Lau and Rowlinson, 2011). Hence, the requirement for project participants to accept some level or degree of risk is unavoidable when striving to get things done. For example, in terms of the delegation by a project manager of any given task to another party, he/she is accepting the inherent risk that the task may not necessarily be completed to their satisfaction. The foundations for this trust may be evident in various forms, and to this end, the remainder of this literature review will further explore these facilitators of trust. However, in instances where by the project manager makes the decision not to accept this risk, then they will be deprived of the consequential benefits that come with having someone else complete the task.

Ultimately, trust helps to overcome uncertainty and risk (Gad and Shane, 2014, Schoorman et al., 2007, Smyth et al., 2010), and aids in reinforcing an individual’s positive motivation, assurance, expectation, belief and behaviour (Wong et al., 2008). The importance of risk, vulnerability and uncertainty in terms of trust and its influence is therefore apparent, and of
particular significance within the project environment in which any construction project operates.

2.2.3 Control mechanisms
Control mechanisms are utilised in a project environment in order to control risk, alleviate uncertainty, and protect the exposure or vulnerability of stakeholders (Schoorman et al., 2007, Guo et al., 2013). While trust is facilitated via the potential penalties for non-performance in any control mechanism, a further activation of trust is similarly evident when confidence is instilled in the respective parties as a result of the fulfilment of the control requirement (Wong et al., 2008, Guo et al., 2013, Kai Lu and Yan, 2016, Lau and Rowlinson, 2011).

On the contrary, project participants may interpret excessive control mechanisms which inflict unwarranted conditions or reporting obligations as a sign of distrust (Pablo et al., 2016), as such arrangements infringe on their need to feel in control (Pinto et al., 2008, Guo et al., 2013). Consequently, the development of trust-based relationships within the project environment is likely to be hindered by the resultant distrust forthcoming from control mechanisms that are seen to be excessive (Gad and Shane, 2014, Schoorman et al., 2007, Guo et al., 2013, Poppo and Zenger, 2002, Pablo et al., 2016, Lau and Rowlinson, 2011).

Cost is also a key consideration in terms of the control mechanism that governs any project environment, due to the fact that the implementation of any control mechanism, and the consequent compliance requirement, inevitably comes at some cost to the project organisation (Guo et al., 2013, Poppo and Zenger, 2002). In this regard, trust can be of fundamental importance in striving to reduce these costs (Guo et al., 2013, Zaheer et al., 1998), and responding to the inherent deficiencies that exist in any contract (Sward, 2016, Jones and Lichtenstein, 2008). If trust is present within stakeholder relationships, the requirement for control can be reduced, as the respective parties are able to function without fear of exploitation (Aubert and Kelsey, 2000, Gad and Shane, 2014, Schoorman et al., 2007, Guo et al., 2013, Suprapto et al., 2015).

Construction practitioners must therefore acknowledge and understand the divergent influences of control mechanisms in terms of trust in the project environment. To this end, an equilibrium must be reached, whereby confidence between parties is nurtured, control costs
are maintained at an acceptable level, and excessive control, which hinders the development of trust, is avoided.

2.2.4 Relationships
A relationship describes the condition in which one party is dependent on another party in order to achieve any given objective (Sheppard and Sherman, 1998), and the presence of a relationship is vital in the development of trust (Deutsch, 1958, Rosseau et al., 1998, Schoorman et al., 2007). The advantages derived when trust-based relationships are embraced is widely acknowledged (Pinto et al., 2008, Guo et al., 2013, Cheung et al., 2015), and project success is to a large degree determined by the trust that underpins stakeholder relationships (Pinto et al., 2008, Che Ibrahim et al., 2011, Gad and Shane, 2014, Meng, 2012, Wong et al., 2008, Cheung et al., 2015, Gajendran et al., 2013). Misztal (1996, n.p.) further highlights the significance of trust-based relationships in describing trust as being:

“essential for stable relationships, vital for maintenance of cooperation, fundamental for any exchange and necessary for even the most routine of everyday interactions”.

This explanation of trust is of particular relevance in a construction project context, whereby stakeholder resources must be used collectively in the pursuit of universal project objectives. Misztal's (1996) conclusions are of particular consequence within the project environment where stakeholder resources are employed collectively. In this regard, if stable and collaborative relationships are sustained, and information exchange is facilitated via effective interaction of the project team, than ultimately the progress of any project is likely to be enhanced (Che Ibrahim et al., 2011, Gad and Shane, 2014, Misztal, 1996).

The link between trust and improved relationships within a project setting is also highlighted by Pinto et al. (2008, p.1):

“Trust is argued to enhance a variety of intra-organisational relationships, including project team dynamics, top management support and coordination across functional departments”.

Within a project context, the building of relationships between key stakeholders is therefore strongly influenced by trust (Karlsen et al., 2008, Cheung et al., 2015, Suprapto et al., 2015, Shiu et al., 2014, Ajmal et al., 2012), with the ongoing interactions between project participants considered to be critically significant in this regard (Mayer et al., 1995, Tomlinson and Mayer, 2009, Weiner, 1986, Ceric, 2014, Che Ibrahim et al., 2011,

The temporary and unique characteristics of any project can often ensure that project teams are not afforded the benefit of past relationships or experiences on which initial trust can be founded (Atkinson et al., 2006, Guo et al., 2013, Kai Lu and Yan, 2016). The requirement to develop from a low base to a high base of trust is therefore an important consideration in the pursuit of well-functioning relationships (Karlsen et al., 2008). Moreover, the challenge of establishing coordinated and well functioning project teams is hindered as a result of the uncertainties which are unavoidably present in any unique project endeavour (Karlsen et al., 2008, Soderlund, 2010). As such, the potential benefits which are the consequence of improved relations amongst project participants (Rosenfeld et al., 1991) may be forfeited.

It is also important to acknowledge that the quality of any trusting relationship is dependant on both parties. Trusting behaviour must be exhibited by the trustor, while the trustee must also demonstrate behaviour that is trustworthy. In any relationship trust must be mutual, and the respective parties must remain true to the role of both trustor and trustee (Romahn and Hartman, 1999, Chow et al., 2012, Ajmal et al., 2012). To this end, past literature suggests that the benefits of trusting relationships are best realised when high, but not extreme levels of trust are displayed by the trustor and trustee. Ultimately, reciprocal trust must be displayed by all project participants in order to fully realise the benefits of a trust-based relationship (Sward, 2016, Ajmal et al., 2012).

Given the human element that is fundamental in any project endeavour, successful relationships are critically important when trying to get things done. Hence, the significance of trust in this regard is particularly pertinent.

2.2.5 Relationship interactions and trust
Character attributes are acknowledged to affect the development of trust (Ferrin and Dirks, 2003, Che Ibrahim et al., 2011, Gad and Shane, 2014, Shadish, 1995, Gajendran et al., 2013), and when interacting within a relationship, individuals give consideration to past experiences, either positive or negative (Buvik and Rolfsen, 2015, Poppo et al., 2008, Sward, 2016). In this regard, character attributions assigned to any individual are contemplated along three primary dimensions – locus of causality, controllability, and stability (Weiner, 1986) – as detailed in Figure 2.1. The outcomes forthcoming from this dimensional analysis
consequently initiate future expectations and emotional reactions, which combine to guide actions and behaviours in the future (Tomlinson and Mayer, 2009). Furthermore, and of particular significance in terms of relationships operating within a project context, this process of evaluation facilitates the updating or reassessing of trust, and ultimately establishes the degree to which either party is willing to accept risk (Mayer et al., 1995, Schoorman et al., 2007).

**Figure 2.1 Dimensions of assigned character attributes** (Tomlinson and Mayer, 2009)

2.2.6 The temporary nature of a project
The distinguishing characteristics that embody any project are of considerable significance in terms of the time available for stakeholder relationships to be developed. In this regard, time is considered to be a defining attribute in any relationship (Karlsen et al., 2008, Schoorman et al., 2007), and the temporary nature of a project is therefore of great consequence in terms of facilitating and building trust (Guo et al., 2013, Buvik and Rolfsen, 2015, Challender et al., 2014). The temporary and defined timeframe which defines any project essentially hinders the ability of stakeholders to develop long-term trust in interpersonal relationships (Munns, 1995, Che Ibrahim et al., 2011, Soderlund, 2010, Buvik and Rolfsen, 2015, Wang and Yin, 2013, Ajmal et al., 2012, Gajendran and Brewer, 2012), as the time available to foster trust is
restricted to the period of the project (Hartman, 2002, Soderlund, 2010, Walker, 2009, Wang and Yin, 2013, Ajmal et al., 2012, Gajendran and Brewer, 2012). Given that the establishment of trust is most often attained over a period of time, and inclusive of multiple interactions, it can be reasoned that the temporary nature of a project is fundamentally at odds with the building of trust (Dervitsiotis, 2003). As multiple interactions are often not innately fostered within the project environment, the significance of trust is of even greater importance when striving for the development of project relationships (Atkinson et al., 2006).

While the temporary nature of a project may not be readily conducive to the development of trust in interpersonal relationships (Munns, 1995), the initial stages of a relationship can actually be strengthened by a natural assumption to trust, provided no evidence exists to the contrary (McKnight et al., 1998). Moreover, high levels of trust can be displayed by individuals even in relationships devoid of any previous history (Meyerson et al., 1996, Kai Lu and Yan, 2016).

In striving to develop trusting relationships, project stakeholders are therefore presented with unique challenges as a result of the temporary nature of a project environment. A greater awareness of the importance of trust and the attributes which facilitate trust must be advocated, along with an acknowledgement that the project setting may not be innately encouraging in terms of developing trust and trust-based relationships. Similarly, the start up phase of any project is likely to benefit if all project participants have an understanding of the inherent trusting disposition that is likely to influence initial project interactions.

2.2.7 The unique nature of a project

The fact that any project is essentially a unique endeavour is also a significant factor in terms of trust between project participants. A high degree of uncertainty and randomness characterises any project environment, which consequently hinders the development of trust (Ajmal et al., 2012). Furthermore, members of the project team may be involved for reasons none other than that they are available and possess the required skills and expertise, potentially resulting in a lack of motivation towards universal project goals and objectives. These challenges are specific to the project setting, and place particular burdens on the development of trust (Hartman, 2002, Soderlund, 2010). All project participants must therefore consider the unique nature of a project, and the subsequent influences in terms of developing and maintaining trust in the project environment.
2.2.8 Facilitators of trust

The human aspect of the project setting is logically fundamental to issues pertaining to trust. Factors that facilitate trust are significant within the context of stakeholder interactions, as are attributes required of a trustworthy party. This section of the literature review will further examine previous research in order to cast light on characteristics of trustworthy behaviour that facilitate the development of trust within the project environment.

Trustworthy behaviour indicates that one party is willing and able to act in the best interests of another party (McLain and Hackman, 1995). Past literature indicates that the extent to which an individual stakeholder is more or less trusted is determined by their characteristics and actions (Good, 1988, Johnson-George and Swap, 1982, She, 2013). Furthermore, trustworthiness can be attributed not only to factors internal to the trustee, but also to situational factors (Kruglanski, 1970, Malhotra and Murninghan, 2002, Strickland, 1958).

The following section of the literature review will examine facilitators of trust deemed to be important to all stakeholders within a project setting. It is acknowledged that there are many attributes which influence the facilitation of trust, and the qualities and characteristics examined herein should not be considered to be exhaustive, nor indicative of all pertinent issues or factors. Rather, the factors examined have been selected based on common and recurring themes identified in past research. In this regard, McKnight and Chervany (1995) identify issues of integrity, ability/competence, honesty and benevolence. Karlsen et al. (2008) confirm these trust trustworthiness attributes (Mayer et al., 1995), while also adding characteristics of good communication and reliable behaviour.

In contemplating and examining these attributes, it is significant to understand that the various trust-building mechanisms are mutually related to a high degree (Lander et al., 2004). Given it is difficult to differentiate one means from another (Lander et al., 2004), it is somewhat problematic to attempt to consider the various attributes in isolation. While this literature review has examined and discussed the identified facilitators of trust individually, it is important to understand and appreciate the reciprocal relationship that exists between the respective attributes, in terms of affecting trust within the project environment.

2.2.8.1 Reliable behaviour

Reliable behaviour where by words and actions align demonstrates to other project participants the extent to which any given individual is consistent and dependable (Karlsen et
In terms of the development of trust, the behaviour of the respective parties to a relationship is considered to be significant (Whitener et al., 1998, Gad and Shane, 2014, She, 2013, Ajmal et al., 2012), as trust in a relationship is bolstered by behaviour that is predicable (Graen and Uhl-Bien, 1995, Ho and Weigelt, 2002, Gad and Shane, 2014, She, 2013).

The reciprocal function of trust in which untrustworthy actions or behaviours are countered with actions or behaviours which are distrustful (Karlsen et al., 2008) is also of importance to project participants. Additionally, hidden agendas and devious behaviour are deemed to be particularly disruptive of trust, and behaviour of this sort is likely to lead to distrust (Lander et al., 2004). Lewicki et al. (1998, p. 439) define distrust as:

“the expectations that others will not act in one’s best interests, even engaging in potentially injurious behaviour, and expectations that capable and responsible behaviour from specific individuals will not be forthcoming”.

The influence of distrust is consequently considered to be critically important in terms of the behaviour of all project stakeholders, with an awareness regarding the actions and behaviours that can facilitate distrust being particularly significant.

Ultimately, within any project environment, reliable behaviour is of distinct relevance to ongoing stakeholder exchanges and overall project outcomes. If project interactions are able to proceed with certainty based on behaviour that is observably reliable, then an environment can be cultivated which assists and nurtures the development of trust between members of the project team.

2.2.8.2 Communication

Within any project environment, the quality of communication is acknowledged to have a strong influence on stakeholder interactions and eventual project outcomes (Packendorff, 1995, Che Ibrahim et al., 2011, Cheung et al., 2013, Gad and Shane, 2014, Buvik and Rolfesen, 2015). To this end, communication that is well-timed, correct and expresses the appropriate information is deemed to be essential for project success (Braendshoi, 2001).

Communication essentially facilitates information exchange, and a reliance on the information imparted between project individuals allows trusting relationships to be developed (Dainty et al., 2006, Lander et al., 2004, She, 2013, Dirks and Ferrin, 2001, Guo et al., 2013, Buvik and Rolfesen, 2015, Suprapto et al., 2015, Gajendran et al., 2013). Hence, communication is deemed to be the single most trust building mechanism (Lander et al.,
To this end, accurate and forthcoming information, clarification of decisions, and openness, are all considered to be factors which encourage perceptions of trustworthiness (Whitener et al., 1998, Che Ibrahim et al., 2011), with good communication ultimately promoting trust (Wong et al., 2008). Furthermore, when responding to negative events that inevitably occur in any project environment, the literature suggests that blame apportionment is likely to be moderated by a display of trustworthy behaviour in the form of communication (Korsgaard et al., 2002). It is therefore evident that project outcomes are critically influenced by effective communication, and the subsequent development and maintenance of trust (Ceric, 2015, Che Ibrahim et al., 2011, Cheung et al., 2013, Dainty et al., 2006, Das and Teng, 1998, Doloi, 2009, Gad and Shane, 2014, Pinto et al., 2008, She, 2013, Wong et al., 2008, Ceric, 2016).

The converse link between communication and trust is similarly evident. The development of trust is promoted and fostered by good communication. Similarly, a project environment which is strong on trust, can facilitate the exchange of information that is fundamental to efficient and effective communication (Aubert and Kelsey, 2000, Che Ibrahim et al., 2011, Ajmal et al., 2012).

The need for good communication is of particular importance within the context of a project environment. To this end, the requirement for accurate and open communication is understandably important, given that members of a project team must operate collectively in a co-ordinated manner in order to get things done (Che Ibrahim et al., 2011). Factors pertaining to the unique and temporary nature of a project are also important in this regard, with good communication considered to be an antidote that will help overcome issues arising from stakeholders who are not familiar with one another. Open communication is also likely to provide project participants with a level of motivation and empowerment, which ensures that an individual's own interests remain secondary to the overall interests of the project (Che Ibrahim et al., 2011, Buvik and Rolfsen, 2015). The management of construction projects and the associated communication risks is therefore critically dependant on the relationship between good communication and trust (Ceric, 2015, Ceric, 2016).

2.2.8.3 Competence

Competence is widely acknowledged to be a significant determinant of trust (Costigan et al., 1998, Karlsen et al., 2008, Lander et al., 2004, Shazi et al., 2015, Ajmal et al., 2012, Lau and Rowlinson, 2011), with the perceived trustworthiness of any individual determined to a large
degree by their ability (Butler, 1991, Deutsch, 1958, Gabarro, 1978, Sitkin and Roth, 1993, Shazi et al., 2015). In this regard, past research by Hartman (1999) included competence-based trust in his trust model. That is, one party's confidence that another party is competent to undertake any given task.

Within a project setting, factors that are considered to influence competence trust include qualifications, demonstrated understanding based on past experience, position title, reputation, or an affiliation with an industry body or professional union or organisation.

The link between competence and trust is therefore of fundamental importance to all project stakeholders, with an understanding in this regard likely to directly affect interactions within the project environment, with ultimate project outcomes similarly influenced.

### 2.2.8.4 Benevolence

The concept of benevolence has been identified and widely discussed by a number of trust researchers (Deutsch, 1960, Hovland et al., 1953). Benevolence is considered a common characteristic of trust (Lamsa and Pucetaite, 2006, She, 2013, Schoorman et al., 2007, Ajmal et al., 2012, Lau and Rowlinson, 2011) and is described as one party’s confidence that another party will act with compassion (Lamsa and Pucetaite, 2006).

Mayer et al. (1995, p. 718) provide further explanation in this regard, describing benevolence as:

“the extent to which a trustee is believed to want to do good to the trustor, aside from an egocentric profit motive”.

Benevolent behaviour illustrates an emotional connection between a trustor and a trustee (Mayer et al., 1995), and is in essence concerned with relationships among project team members (Shazi et al., 2015, She, 2013).

Benevolent behaviour ultimately enhances the inclination to trust, and within the project setting may be revealed via poignant displays of friendliness, or a willingness for open, cheerful and cooperative interactions (Karlsen et al., 2008).

Benevolent behaviour will therefore strongly influence stakeholder interactions. Trusting dispositions are likely to be developed and enhanced within stakeholder relationships if actions and behaviour establish the willingness for one individual to offer assistance to another individual, without the prospect of any personal reward (Mayer et al., 1995, Whitener...
et al., 1998). In the same way, behaviour that abstains from exploiting others for the benefit of one’s own interest is also favourable to the development of trust (Whitener et al., 1998), and in instances in which negative interactions do come to pass between stakeholders, blame apportionment is likely to be reduced by a demonstration of trustworthy behaviour in the form of concern (Korsgaard et al., 2002). Consequently, factors of benevolence are deemed to be significant within any project setting.

2.2.8.5 Integrity
The link between integrity and trust is widely acknowledged in past literature (Butler and Cantrell, 1984, Gabarro, 1978, Lieberman, 1981, She, 2013, Schoorman et al., 2007, Shazi et al., 2015, Ajmal et al., 2012, Lau and Rowlinson, 2011). Evidenced by displays of dependability and reliability, integrity essentially concerns mutually acceptable values which are shared by both the trustor and the trustee (Mayer et al., 1995), with these shared values guiding the attitudes and actions of both parties. Or put another way, when interacting within the project setting, project participants understand and believe that their own welfare and interests will be protected by others within the project team (Hartman, 1999).

Integrity as a character trait is therefore important in any project individual. To this end, words supported by action and constancy in past behaviours may demonstrate integrity, as might credible information provided by others (Mayer et al., 1995).

Ultimately, a consistent correlation between words and actions will enhance trust levels amongst members of the project team, with demonstrated attributions of integrity, truthfulness, and honourable character influencing stakeholder attitudes and relationships within the project environment (Whitener et al., 1998).

2.2.8.6 Honesty
Honesty is concerned with personal characteristics which demonstrate objective credibility (Munns, 1995), and is defined as “the degree to which people mean what they say and whether their promises are shallow or deep” (Dervitsiotis, 2003, p. 513). Hence, the character traits displayed by any individual within the project setting are significant (Munns, 1995), and will ultimately define how honest or sincere others perceive them to be. If traits of honesty are evident, project stakeholders are able to interact without fear of betrayal or misleading behaviour (Munns, 1995). Consequently, the development of trust is likely to be positively influenced (Karlsen et al., 2008) by forthright and truthful interactions whereby
actions align with words (Hosmer, 1995, Humphrey and Schimtz, 1998, Lander et al., 2004). To this end, honesty may be demonstrated by completing tasks as agreed, admitting mistakes, sharing information openly, and acting at all times in a manner which demonstrates credibility and a high level of trustworthiness. Honesty is therefore important to the stakeholder interactions which are integral to the functioning of any project team.

2.2.8.7 Trust and project management
When considering the influence of trust on the delivery of any project endeavour, the ability to build trust between members of the project team is critical (Gad and Shane, 2014). Hence, the development of trust is fundamental to all facets of project management, and the respective roles of project participants (Karlsen et al., 2008, Che Ibrahim et al., 2011, Gad and Shane, 2014). Trust should be deemed a powerful asset for any organisation, and is considered by Romahn and Hartman (1999, p. 1) to be “an essential element of project work”. To this end, if trust is cultivated amongst project stakeholders, the ensuing loyalty created can promote an environment in which stakeholders understand and trust the direction of the project and the organisation as a whole (Beslin and Reddin, 2004, Che Ibrahim et al., 2011). In this regard, the particular characteristics which define a project will significantly influence the development of trust.

2.2.8.8 Team environment
Past literature suggests that a team environment is significantly influenced by trust (Crisp and Jarvenpaa, 2000, Delisle, 2004, Che Ibrahim et al., 2011, Gad and Shane, 2014, Suprapto et al., 2015, Shiu et al., 2014). All parties to a project play a role in the development and maintenance of culture within the project team, and it is therefore important that the influence of trust in this regard is recognised. If a positive and healthy team environment can be nurtured, other elements of trust examined previously in this literature review will also be influenced in a positive manner (Che Ibrahim et al., 2011, Suprapto et al., 2015).

Trust is also considered to be important across hierarchical levels and between respective organisational departments (Pinto and Slevin, 1987, Shiu et al., 2014), and in this regard, relationships founded on trust are significant to all stakeholders and the interactions at play within a project environment.
2.2.8.9 The initial intent of project stakeholders

To a large degree, the outcomes of any given project are determined by the initial intent and expectations of the parties involved (Gad and Shane, 2014, Munns, 1995). If relationships originate from a non-trusting intent, the dynamics of the project will be such that the project will be unsuccessful. In this regard, the unsuccessful outcomes will come about as a result of the respective parties not being willing to embrace the mutual positive result that is the natural consequence of trust. To this end, non-trusting intent may be demonstrated by poor communication and a restriction of information, or by an aversion to sharing decision making or delegation of control. This can lead to scenarios in which the actions and behaviours of team members are motivated by self interest, and not the overall interests of the project, subsequently hindering the development of trust (Munns, 1995, Whitener et al., 1998).

Literature suggests that the initial project environment, with respect to relations on a project, is not within the control of the project’s participants. In instances where the initial environment is not conducive to the natural development of trust, the challenge for all stakeholders is to counter the reciprocal nature of a relationship, in which mistrust is reciprocated with a further lack of trust (Munns, 1995). While a pre-emptive demonstration of trustworthy behaviour in the initial stages of an exchange relationship bears some risk, the potential benefits of trust may be forfeited if the alternate option of closely monitoring behaviour, and imposing tight controls is adopted (Whitener et al., 1998). Additionally, in relationships where there exists no evidence to the contrary, the natural predilection to trust (McKnight et al., 1998), as discussed previously, is of particular importance to all project participants when evaluating and responding to the initial intent of others (Gad and Shane, 2014).

2.2.8.10 Lindskold’s model for trust building

Figure 2.2 provides a summary of Lindskold’s model for building trust, as provided by Munns (1995, p. 22). The fundamentals of this model can be applied throughout the entire period of any project. However, the model is particularly useful during the initial stages of a project, in instances whereby it becomes apparent that the environment for nurturing trusting relationships is sub optimal. The model highlights once more the themes of vulnerability and risk, and reinforces the value of behaviour and communication in terms of building trust.

In employing this model, a project participant must firstly make a conscious decision to accept vulnerability, with the intention being to increase trust in the relationship. Statements
of intent must then be tendered, with these words clearly articulating a desire and willingness to trust. Supportive actions which confirm compliance with the statements made must subsequently be displayed (Munns, 1995).

Subsequent actions are determined according to the response received from the other party. In instances where no response is received at all, the potential for future benefit still exists, so the statements of trust supported by actions should be sustained (Munns, 1995).

Alternatively, an exploitive response may be received, and the afforded vulnerability may be taken advantage of. In such instances, steps must be taken to mitigate the exploitation, while at the same time avoiding the perception of gullibility. Reciprocal exploitation that conflicts with early statements of intent must also be avoided. Providing the effects of the exploitation are able to be eliminated, efforts to enhance the level of trust in the respective relationship should be maintained, in the hope that a more a beneficial response may subsequently be received. To this end, the continued display of benevolence, along with an understanding that nothing is to be gained through exploitation, is likely to illicit the desired response (Munns, 1995).

If an encouraging response is received, and trust is reciprocated, then an escalation in the level of trust in the relationship will begin. This increase in trust will develop slowly, and is likely to initially be evident only in minor exchanges which carry minimal risk, and hence require minimal trust. However, over time, and through multiple interactions, the afforded levels of trust will be affirmed, and the extent of trust and degree of exchange will indeed increase (Munns, 1995).

In considering the process of trust building, it is also important to acknowledge the significance of emotions when contemplating how trust develops and changes within any relationship, and in particular how emotions provide the framework within which decisions concerning trust and trustworthiness are made (Williams, 2001, Jones and George, 1998, Dunn and Schweitzer, 2005, Lewicki and Bunker, 1996). In this regard, emotions are inherently central to all aspects of the trust conceptualisation theory presented herein, particularly given the human element of trust applicable within a project management context.
2.2.8.11 Trust and project outcomes

With consideration to the human element that is integral to the management of any project, trust is considered vital to facilitating cooperative processes within the project environment (Kramer, 1999, Wicks et al., 1999, Che Ibrahim et al., 2011, Cheung et al., 2013, Gad and Shane, 2014, Tai et al., 2016, Wang and Yin, 2013, Hasanzadeh et al., 2016, Ajmal et al., 2012), and is acknowledged as the most significant determinant of project success (Pinto et al., 2008, Gad and Shane, 2014). To this end, Kadefors (2004, p. 176) provides further elucidation regarding the relationship between trust and project success:

“If trust is present, people can spontaneously engage in constructive interaction without pondering what hidden motives exchange partners might have, who is formally responsible for problems, or the risks of disclosing information”.

Figure 2.2 Lindskold’s model for building trust (Munns, 1995)
Ultimately, by way of improving relationships and maintaining healthy and cooperative partnerships within the project environment, trust has a strong influence on project success (Pinto et al., 2008, Cheung et al., 2013, Gad and Shane, 2014, Wong et al., 2008, Guo et al., 2013, Challender et al., 2014, Wang and Yin, 2013, Hasanzadeh et al., 2016).

2.2.9 Trust breakdown
Given the complex and unique elements that invariably influence the project environment, negative events with the potential to harm relationships are likely to be inevitable. The relationship between the respective parties within a project team will be impacted by a negative event, and within this context, the breakdown of trust can have significant consequences (Lewicki and Bunker, 1996, Robinson, 1996). During the interaction within a relationship, the positive expectations of either party may be violated, leading to reduced trust and the need for trust repair (Kim et al., 2004). Similarly, perceptions of ability, benevolence and/or integrity will be re-assessed and possibly downgraded in response to a negative outcome.

However, situational factors external to the trustee can in some instances be deemed responsible (Mayer et al., 1995). In this regard, perceived reasons for negative outcomes will influence trust differently (Lewicki and Bunker, 1996, Sitkin and Roth, 1993), and the apparent cause determines the impact on the level of trustworthiness (Tomlinson and Mayer, 2009, Weiner, 2001). Table 2.2 elaborates further regarding the perceived basis for a negative event, and the subsequent effect on trust and trustworthiness. Ultimately, negative outcomes that are perceived to be isolated and the result of variable circumstances will have less of an effect on trust (Lewicki and Bunker, 1996, Sitkin and Roth, 1993), than outcomes that are ascribed to typical and context-specific behaviour where it is perceived that, under similar circumstances, the same results are likely in the future (Sitkin and Roth, 1993). Similarly, the resultant level of trustworthiness will be determined by the extent to which a negative outcome is deemed to be due to factors which are internal, controllable and stable to the trustee (Tomlinson and Mayer, 2009, Weiner, 2001). Within this framework, stability is considered to be the most influential, as an outcome attributed to a permanent cause is more likely to result in parallel outcomes in future situations and circumstances, whereas outcomes attributed to temporary causes leaves some scope for the outcome to be different (Weiner, 1986).
**Table 2.2 The basis of negative outcomes: Effect on trust and trustworthiness**

<table>
<thead>
<tr>
<th>Situational</th>
<th>If situational factors are deemed responsible, the trustee’s ability, benevolence or integrity is not called into question, and the external ascription indicates that the level of trustworthiness does not need to be repaired (Tomlinson and Mayer, 2009).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal</td>
<td>Should the negative outcome be attributed to internal factors in terms of the trustee’s ability, benevolence and/or integrity, the dimensions of controllability and stability become relevant to the reassessment of trustworthiness factors (Tomlinson and Mayer, 2009).</td>
</tr>
<tr>
<td>Controllable</td>
<td>As the level of situational control attributed by the trustor to the trustee decreases, so too does the perceived level of culpability. Conversely, as the level of controllability increases, so too does the damage to trustworthiness (Lewicki and Bunker, 1996, Tomlinson and Mayer, 2009).</td>
</tr>
<tr>
<td>Stable</td>
<td>If the negative outcome is attributed to an enduring aspect of the trustee’s trustworthiness that is perceived to be permanent, a downward reassessment of trust takes place, as the trustor is likely to expect the negative outcome to recur given similar circumstances (Tomlinson and Mayer, 2009).</td>
</tr>
</tbody>
</table>

(Lewicki and Bunker, 1996, Tomlinson and Mayer, 2009)

### 2.2.9.1 Trust repair

With consideration of the importance of trust and the subsequent potential for trust to break down within stakeholder relationships, the ability to repair lost trust is logically significant to all members of the project team. Tomlinson and Mayer (2009, p. 87), define trust repair as:

“a partial or complete restoration of the willingness to be vulnerable to the other party following a decline in that willingness”.

Negative events within the project environment present a different scenario, which is pertinent in terms of trust and trust repair. The natural assumption to trust (McKnight et al., 1998) is nullified when a trust violation occurs, meaning that the subsequent level of trust may fall below the original trust base. Any trust repair effort is therefore likely to require a
greater effort than that which was required to establish trust initially (Kim et al., 2006).
Similarly, despite efforts by the mistrusted party to demonstrate trustworthiness, low levels of
trust can be reinforced by the significant information pertaining to the violation which
remains (Slovic, 1993). Likewise, trust repair must not only restore positive expectations in a
relationship, but also overcome negative expectations. The trust repair process therefore
differs from initial trust development (Kim et al., 2004), with implications in this regard
significant in terms of the decisions and actions of project participants in attempting to restore
lost trust in stakeholder relationships.

2.2.9.2 Trust worthiness factors and trust repair
As demonstrated by Mayer et al. (1995), outcomes which are forthcoming as a result of one
party’s willingness to accept risk are directly linked to trustworthiness factors of ability,
benevolence and integrity. That is, positive outcomes will reinforce prior attitudes of
trustworthiness and either maintain or strengthen the level of trust in the relationship.
Similarly, negative outcomes will lead to a re-evaluation of the trustworthiness factors and a
subsequent decline in the level of trust. These interactional outcomes therefore facilitate the
evolution of trust over time, and also provide some reasoning for why abrupt changes in trust
levels can occur after significant negative events. This reasoning also indicates that a decline
in trust is preceded by evidence supporting a decrease in some aspect of trustworthiness, and
therefore supports the idea that trust can be repaired by increasing the aspect of
trustworthiness which has deteriorated (Tomlinson and Mayer, 2009).

With consideration to the trustworthiness characteristics ascribed to the trustee in terms of
ability, benevolence and integrity (Mayer et al., 1995), research by Tomlinson and Mayer
(2009) provides an insight into how damaged perceptions, and subsequently trust, can be
repaired. Damaged perceptions regarding ability can be repaired by demonstrating that the
negative outcome was caused by either an external factor, and/or a more uncontrollable or
unstable form of ability. Regarding benevolence, damaged perceptions can be repaired by
demonstrating that the negative outcome was caused by either an external factor, a more
unstable form of ability, or an incident of low benevolence that is regarded to be unstable. In
matters of integrity, damaged perceptions can be repaired by demonstrating that the negative
outcome was caused by either an external cause or a less stable internal cause. As it is
considered the key driver of future expectations (Weiner, 1986), the stability dimension is
particularly significant in terms of trust repair, and the willingness of either party within a relationship to accept vulnerability in future interactions (Tomlinson and Mayer, 2009).

While trust that is harmed by untrustworthy behaviour can be repaired through consistent actions that demonstrate trustworthiness, in instances where deceptive behaviour is also evident, trust never fully recovers. Similarly, a promise has been shown to be significant in expediting the repair of lost trust, however if a promise is also accompanied by deception, the effectiveness of the promise as a facilitator for trust repair is diminished (Schweitzer et al., 2006).

Considering the significance of emotions in developing and re-evaluating trust and trustworthiness (Dunn and Schweitzer, 2005, Jones and George, 1998, Lewicki and Bunker, 1996, Williams, 2001), it is evident that effective trust repair is also influenced by the ability to manage and reduce negative emotions of anger and fear prior to or at the same time as the repair attempt (Tomlinson and Mayer, 2009).

2.2.9.3 Social explanations for negative events
Following a negative event, initial assessments regarding a trustee’s trustworthiness are not always definitive, and can be nullified or re-assessed as additional information is received (Krull, 1996, Weiner, 1985). To this end, subsequent to a negative outcome, social explanations are likely to influence causal ascriptions to repair trust (Tomlinson and Mayer, 2009), as providing acceptable and genuine clarification for a negative event is more conducive to positive reactions than when outcomes are explained inadequately or not explained at all (Bies and Shapiro, 1987, Shapiro, 1991). Ultimately, casual ascriptions arbitrate the relationship between social explanations and trust repair (Tomlinson and Mayer, 2009). With consideration to this framework of social explanations and trust repair, there are a number of response options available to project participants.

A denial that reduces internal ascriptions (Tomlinson and Mayer, 2009) and proclaims that the cause of a negative event is external to the trustee (Weiner, 1986) can repair damaged perceptions of trustworthiness.

An excuse that accepts some role in a negative outcome but not full responsibility (Scott and Lyman, 1968) can also facilitate trust repair (Tomlinson and Mayer, 2009), by altering ascriptions such that the cause of a negative event is deemed to be more external, uncontrollable, and/or unstable (Weiner, 1992).
An apology repairs damaged perceptions of trustworthiness by reducing stability factors ascribed to the trustee (Tomlinson and Mayer, 2009). This is facilitated by exhibiting some degree of remorse for the negative outcome (Tedeschi and Norman, 1985) along with evidence of a lesson learned that will ensure the offence is not repeated (Goffman, 1971). Past research has also demonstrated that an individual who has been the subject of a transgression will consider their transgressor more favourably and less to blame if they receive an apology, as apposed to instances where no apology is offered (Darby and Schlenker, 1982, Ohbuchi and Sato, 1994).

A justification presented when accepting responsibility, which justifies one’s actions as being in accordance with a higher goal or moral value, and/or facilitates a more positive interpretation of the negative event (Tedeschi and Norman, 1985, Cody and McLaughlin, 1990, Tedeschi and Riess, 1981), can reverse previously held ascriptions in the negative, and repair damaged perceptions of trustworthiness (Tomlinson and Mayer, 2009).

2.2.9.4 Apology or denial
The apology or denial response options following a negative event have been predominant in past research regarding trust repair. An apology is defined by Kim, et al. (2004, p.105) as:

“a statement that acknowledges both responsibility and regret for a trust violation”.

A denial is defined by Kim, et al. (2004, p.105) as:

“a statement whereby an allegation is explicitly declared to be untrue”.

Past research has demonstrated that the effects on trust repair are not always straightforward, and in this regard, an understanding of the multifaceted and sometimes contradictory consequences of the apology or denial response options is of significance to all project stakeholders.

As an apology admits guilt, which may subsequently lower trust, the subsequent effects of an apology in the trust repair effort are not necessarily positive (Riordan et al., 1983, Schlenker, 1980, Sigal et al., 1988). However, the concurrent expression of regret indicates an intention to avoid future transgressions, which in turn should increase trust by reducing the trustor’s concerns regarding continued vulnerabilities (Kim et al., 2004).

Research has also supported the theory that an apology can be more effective than a denial in re-confirming cooperation after an opportunistic event (Bottom et al., 2002). To the contrary
however, research has also concluded that an apology may fail to ameliorate the negative consequences of an accusation because of the fact that it includes an acknowledgement of guilt (Schlenker, 1980), and hence trust would be damaged to a greater degree than any benefits that may be realized through a perception that the violation would be avoided in the future (Kim et al., 2004).

It has also been argued that a denial is more effective than an apology due to the benefit of the doubt subsequently afforded to the trustee, however on the flip side, as a denial does not indicate any change in future behaviour, lingering doubts concerning the mistrusted party may prove detrimental to the level of trust in the relationship. The cost to benefit conclusion may still be such that a denial does still represent an effective riposte to a trust violation (Kim et al., 2004).

Should the apology response option be considered appropriate, the four stage process (as detailed in Figure 2.3) for restoring lost trust proposed by Lewicki and Bunker (1996, p. 131-133), is likely to be useful to project participants. Following application of this process, the actions of the transgressor should aim to undo the violation and restore the lost trust (Gillespie and Dietz, 2009).

![Figure 2.3 Apology response process](Lewicki and Bunker, 1996)

2.2.9.5 Competency or integrity trust violations
Considering the seemingly contradictory conclusions forthcoming from past research pertaining to apology versus denial responses, the nature of the trust violation in terms of competency or integrity has been shown to be relevant.
Past research has shown that when resolving differences concerning matters of competency, individuals are inclined to give more weight to positive rather than negative information. Conversely, in terms of integrity, individuals are inclined to give more weight to negative rather than positive information (Madon et al., 1997, Martijn et al., 1992). Put another way, information regarding negative behaviour is considered to be more indicative of integrity than information regarding positive behaviour. Equally, information regarding positive behaviour is considered to be more indicative of competency than information regarding negative behaviour (Ferrin et al., 2005).

In this regard, perceptions are such that matters of competency are deemed to be influenced by situational factors (e.g. level of motivation, opportunity to perform well) to the extent that a person of high or low competence can each perform well or poorly depending on the situation (Kim et al., 2004). Alternatively, with regards to integrity, perceptions are such that matters of integrity are not deemed to be influenced by situational factors. That is, individuals with high integrity will abstain from deceitful behaviour no matter what the situation; whereas an individual with low integrity may act either honestly or dishonestly depending on the situation (Scott and Lyman, 1968).

Hence, an apology should be more effective than a denial for violations pertaining to issues of competency, while a denial should be more effective than an apology for violations concerning issues of integrity (Kim et al., 2004). Or put another way, when violations pertain to matters of integrity, the apology response confirming one’s guilt should provide a reliable indication that one lacks integrity and this would outweigh any positive influence on trust repair that may be gained through the apology’s indication of redemption. Conversely, when violations pertain to matters of competence, the apology response confirming intent to avoid future violations is likely to have a positive effect on trust that would outweigh any negative effect on trust resulting from the apology’s admission of guilt (Ferrin et al., 2005).

The conclusions reached were also found to hold true following confirmation of the mistrusted party’s innocence or guilt. In this regard, the implications on trust stemming from the chosen response go beyond a basic admission of innocence or guilt. The response also indicates intended redemption, and this redemption is given greater credence in matters of competency when compared with matters of integrity. Hence, simply selecting the appropriate response measure according to the nature of the violation is likely to present
considerable risk to the trust repair efforts, given that trust may be further damaged if the response provided is eventually found to be false (Kim et al., 2004).

2.2.9.6 Apology and internal or external attributions

As identified previously, situational factors have been shown to influence behaviour, and subsequently provide a means for alleviating blame (Kim et al., 2006). Within the context of the apology response option, research has also considered the implications regarding internal and external attributions following competency and integrity-based trust violations (Kim et al., 2006).

External attributions are considered to be of assistance for those who have transgressed in some way (Shaw et al., 2003), and have also been shown to reduce a victim’s anger in response to a transgression, and subsequently moderate possibly provocative situations (Weiner et al., 1987). However, the viability of the external attribution response option does come with limitations. In instances where the transgressor has assumed a greater level of responsibility through internal rather than external attributions, victims have been shown to be more optimistic in their evaluation and expectations of future relationships (Hodgins and Liebeskind, 2003). Similarly, in terms of reconciling a professional relationship following a transgression, external attributions have been found to be less effective than internal attributions (Tomlinson et al., 2004). These limitations are seemingly due to the fact that a transgressor is perceived to be less likely to transgress in the future when they accept responsibility via an internal attribution, rather than those who pass blame via an external attribution (Kim et al., 2006).

In considering external or internal response options for trust repair, research suggests that matters of competence are more effectively dealt with by an externally attributed apology, while matters of integrity are more effectively dealt with by an internally attributed apology. Hence, when the decision to apologise is made, consideration must also be given to how such an apology is framed with regard to internal or external ascriptions. Furthermore, these conclusions also demonstrate that despite the fact that situational factors may be able to explain an individual’s untrustworthy conduct, there are circumstances when it is better to accept a greater level of blame, and also circumstances where it is not. That is, in making an apology, a transgressor should either omit such situational explanations or make such external factors known, depending on the nature of the transgression (Kim et al., 2006).
The research therefore provides a valuable insight into how individuals should frame an apology and highlights the fact that even unmitigated apologies will provide differing results depending on the nature of the trust violation (competency-based or trust-based). It should also be noted that, while integrity based trust violations are more effectively repaired through external attributions, this does provide validation for giving a false account of one’s guilt, as such behaviour has been found to be detrimental to trust in a relationship (Kim et al., 2004). These conclusions should instead highlight the importance of avoiding integrity-based trust violations in the first instance (Kim et al., 2006).

2.2.9.7 Reticence
Research has also identified reticence as a potential response to a trust violation (Ferrin et al., 2005). Reticence is defined by Ferrin, et al. (2005, p. 1) as:

“a statement in which the accused party explains that he or she cannot or will not confirm or disconfirm the veracity of the allegation”.

Inherent in reticence is an implication or request that the violated party should withhold judgment regarding the claimed violation, and in certain situations, reticence is likely to be considered a logical or reasonable response option following a negative event. Reasoning in this regard may be founded on a strategic or legal rationale. Similarly, reticence may be appealing in instances where it is more appropriate to respond in this way, rather than with a more definitive explanation. Despite the apparent appeal for this type of response, research has concluded that the use of reticence is typically, if not always, suboptimal, even in instances where it is used for justifiable reasons (Ferrin et al., 2005).

2.2.10 Trust framework
Coming out of the detailed literature review of trust is a framework of trust themes, categorised along contextual, human and attribution variables, with factors of trust failure also deemed significant. This trust framework, founded on literature, is integral to the development and implementation of the adopted methodology. A summary of the developed trust framework is included in Figure 2.4, with full details provided Appendix 1.
2.3 Part Two – Construction procurement

2.3.1 Introduction
In any construction project, the method of procurement is logically significant in terms of eventual project outcomes. Hence, considering trust and its influence, the contextual particulars of the respective procurement method are similarly pertinent. While the benefits of trust are acknowledged in both transactional and relation-based procurement alternatives (Gad and Shane, 2014), the trust levels within the construction industry are nonetheless demonstrably low (Zaghloul, 2003, Cheung et al., 2015, Challender et al., 2014, Wong et al., 2008).
In general terms, transaction-based procurement is considered to be less conducive to high levels of trust (Barnes, 2000, Chan and Kumaraswamy, 2002, Che Ibrahim et al., 2011, Chen and Chen, 2007, Rahman and Kumaraswamy, 2004) when compared with relation-based procurement alternatives (Chan et al., 2004, Cheung et al., 2003, Laan et al., 2011, Wong et al., 2008, Kumaraswamy et al., 2005b, Kumaraswamy et al., 2005a), although it is acknowledged that relational procurement does not guarantee that higher levels of trust will be exhibited (Lau and Rowlinson, 2009). Within the context of trust and its influence, this section of the literature review will explore the fundamental principles of the respective procurement alternatives.

2.3.2 Transactional procurement
Transaction-based procurement (traditional procurement) encompasses traditional lump sum and design and construct procurement mechanisms, whereby a fully prescribed contractual arrangement is entered into between client and contractor. Contractors are predominantly selected according to lowest price in a competitive bid process (Challender et al., 2014), with contract superintendents often embracing the position of gatekeeper, protecting the interests of the client (Rowlinson and Cheung, 2002). The choice to utilise a transactional approach based on an open and competitive bid process is often founded on a client’s perception that a testing of the market regarding price is the only way to ensure the lowest possible capital cost (Ross, 2011). This mindset gives little consideration to other influencing factors, and to this end, appropriate risk identification and allocation on any given project should be given particular consideration.

Given that the environment in which the construction industry operates is often inherently challenging, the management and appropriate allocation of risk, and the ability to adequately contend with “change” is considered critical (McGuinn, 1989, Sakal, 2005, Gad and Shane, 2014). In this regard, the transactional framework which underpins the traditional procurement approach conventionally adopted within the industry is somewhat limited (Che Ibrahim et al., 2011), particularly when dealing with complex and high risk endeavours (Macneil, 1978, Campbell, 2004).

By way of design, traditional construction contracts attempt to definitively allocate risk amongst stakeholders, despite the fact that at the project outset, it is fundamentally impossible to foresee or quantify all potential risks and uncertainties (Macneil, 1978).
Essentially, traditional contracts focus on identifying potential uncertainties, but fail to recognise or facilitate the cooperative relationships that are considered critical to the success of a contractual arrangement in terms of dealing with issues when they arise (McInnis, 2003). Effective risk management under traditional contracts is therefore unavoidably compromised. Similarly, the fundamentals of a traditional contract ensure that the respective parties inevitably act in a manner which protects their own individual interests, often leading to disputes and outcomes not consistent with what is best for the project as a whole (Steen, 1994, Chan et al., 2006, Mosey, 2003). Adversarial relationships characterised by conflict are also facilitated (Chen and Chen, 2007, Li et al., 2001), with these characteristics directly attributed to the competitive, fixed price environment of the traditional contract (Pesamaa et al., 2009, Rowlinson and Cheung, 2002). Furthermore, onerous contract conditions also have the potential to discourage responsible tendering, and attract opportunistic parties who enter an agreement with motives already founded on devious intentions, particularly in terms of tender price, anticipated variations (Ruben et al., 1999, Rahman and Kumaraswamy, 2004), and exploitation of weaknesses in the contract documentation (Mosey, 2003). The contractual arrangements which mandate different processes under a traditional procurement mechanism also result in inefficiencies (Doloi, 2013).

Ultimately, the traditional procurement approach has been found to negatively impact on project outcomes in terms of disputes (Pesamaa et al., 2009, Zhang and Ying, 2015), distrust and conflict (Sakal, 2005, Pablo et al., 2016), loss of productivity (Ng et al., 2002), high levels of litigation (Yiu and Cheung, 2007), a prevalence for disagreement rather than cooperation (Wood and McDermott, 2001), poor communication (Mihic et al., 2014), cost blow outs, and project delays (Chan et al., 2003). The segregated nature of work processes under a transactional procurement mechanism are also considered to hinder trust building (Soares, 2012). The failings of traditional construction procurement and the need for alternatives have therefore been broadly acknowledged by literature (Barnes, 2000, Chan and Kumaraswamy, 2002, Che Ibrahim et al., 2011, Chen and Chen, 2007, Rahman and Kumaraswamy, 2004, Latham, 1994). The characteristics and fundamental principles of transactional procurement are therefore significant in terms of trust and the management of construction projects.
2.3.3 Relational procurement

The construction industry is often considered to be characterised by conflict (Sexton and Barrett, 2003), and consequently, the promotion of relation-based procurement is becoming increasingly apparent (Bennett et al., 2006, Chan et al., 2006). Relational contracting (RC) was developed in response to the identified shortcomings of the conventional transactional procurement approach, and the adversarial culture that was often common place within the construction industry (Latham, 1994, Cook and Hancher, 1990, Hancher, 1989, Goddard, 1997, Rubin and Lawson, 1988, Provost and Lipscomb, 1989, Cheung et al., 2015, Wood and McDermott, 2001). Macneil (1980, p. 4.), who was primarily responsible for the development of relational contract theory (1974, Macneil, 1980, Macneil, 1981, Macneil, 1983), provides the following definition:

“the relations among parties to the process of projecting exchange into the future”.

Essentially, and as applied within the construction industry, the principles of RC aim to encourage collaboration (Rahman and Kumaraswamy, 2004, Parker and Hartley, 2003, Palaneeswaran et al., 2003), appropriately allocate and manage risk (Alsagoff and McDermott, 1994, Jones, 2000), and foster benevolent contractual relationships which negate the transactional barriers to team building (Rahman and Kumaraswamy, 2004, Macneil, 1974, Macneil, 1980). Long term relationships are considered to be a significant factor in any relationally procured project (Bresnen and Marshall, 2000), with partnering founded on relationship agreements and teamwork considered to provide an effective framework for managing conflicts and mitigating risks between contracting parties (Rahman and Kumaraswamy, 2002). Through a recognition of mutual benefits, stakeholders within a relational contract move past a reliance on purely legal terms, and function instead dynamically within a contractual, economic and behavioural framework (Macaulay, 1963). As complex construction projects inherently result in an ever evolving contractual landscape, the relationships between parties are critical, and RC provides the context within which these relationships can be developed and maintained in a manner typically difficult in traditional transaction-based procurement (Rahman and Kumaraswamy, 2004).

The concept of collaboration is particularly pertinent in terms of the fundamental principles of RC and the overarching desire to reduce conflicts (Cook and Hancher, 1990, Rowlinson and Cheung, 2005). In this regard, the benefits of collaboration within the construction industry are widely recognised (Walker and Hampson, 2003, Raham et al., 2013, Gajendran
and Brewer, 2012). Given the significance of collaboration within the RC context, the question of how to foster a collaborative environment is logically pertinent. To this end, precursor dimensions for collaboration identified by literature include mutual objectives and actions, individual competence, distribution of authority, communication, and trust (Gajendran and Brewer, 2012, Zhang and Ying, 2015), with the communication and trust dimensions especially relevant to the scope of this research.

The literature suggests that there are certain factors considered to be critical for the success of projects procured relationally. These include effective risk management (Rahman and Kumaraswamy, 2005), ability-based trust and confidence amongst the project team (Ngowi, 2007), and open and reliable communication (Cheung et al., 2003). Trust between parties (Rahman et al., 2007), trust and trust-based relationships (Rahman and Kumaraswamy, 2008), and mutual trust (Chan et al., 2006) are also commonly highlighted. Trustworthiness between parties is also thought to allow the partnering process to operate without the need for contractual control clauses (Ngowi, 2007). Conversely, a lack of trust between partners, and differing opinions regarding the resolution of disputes, are considered to be detrimental factors in achieving successful project outcomes (Ngowi, 2007, Phua, 2006).

While issues of trust, risk and communication feature predominantly in the reviewed literature when discussing critical success factors, there remains some debate regarding the respective influences in this regard. Doloi (2009) contends that while a lack of trust may contribute significantly to project inefficiencies, it nonetheless does not directly affect the success of a relational agreement. Similarly, he also asserts that effective risk management is not critical to partnering success, however he does acknowledge that risk management efforts become easier as the levels of trust increase. Ultimately, Doloi (2009) identifies communication as the most critical factor in achieving successful partnering arrangements, with clear and open lines of communication across all levels essential in order to ensure the success of a relational partnership. However, he also highlights the fact that the development of trusting relationships, and a collaborative approach to risk management, are inherent in an environment which is conducive to facilitating effective communication (Doloi, 2009).

While the influence of trust remains debateable, it is nonetheless significant. Hence, the dynamics of any relational procurement approach need to be considered when investigating trust within a construction management context.
The ultimate benefits of RC have been extensively acknowledged, as summarised in Table 2.3. With consideration to the fundamental RC principle of reducing conflict, the recurring themes pertaining to relationships, team work, collaboration, communication, culture, and risk management are considered particularly significant within the context of this research.

Table 2.3 Ultimate benefits of relational contracting

<table>
<thead>
<tr>
<th>Author and year</th>
<th>Benefits of relational contracting</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Macneil, 1974, Macneil, 1980)</td>
<td>Contractual flexibility; Enhanced relationships; Fosters team work.</td>
</tr>
<tr>
<td>(Alsagoff and McDermott, 1994, Jones, 2000)</td>
<td>Improved allocation and management of risk</td>
</tr>
<tr>
<td>(Thompson and Sanders, 1998)</td>
<td>Substantial improvements in productivity; Potential for eliminating redundancy; Potential to lesson supervisory encumbrance; Improved teamwork and coalescence.</td>
</tr>
<tr>
<td>(Chan et al., 2003)</td>
<td>Improved cost and time control; Reduced litigation; Improved quality; More efficient problem solving. Closer relationships; Superior communication; Continuous improvement; Potential for innovation; Reduced administrative expenses; Improved safety; Increased satisfaction;</td>
</tr>
</tbody>
</table>
Improved culture.


Improved collaboration.

(Rahman and Kumaraswamy, 2004)

Improved teamwork;
Enhanced cooperation;
Facilitates proactive joint risk management;
Through flexibility, facilitates softer contractual relationships and overcomes transactional barriers to team building.

It should be noted that there remains some criticism that literature professing the benefits of RC fails to adequately consider its limitations, nor the poor examples that have at times eventuated (Bresnen, 2007). To this end, critics have claimed that a focus on success rather than failure has presented an unbalanced view of RC benefits, and hence questions of reliability in this regard have subsequently been raised (Rics, 2005). Client value for money has also been questioned (Morgan, 2009), and there is the view that RC is nothing more than a “disruptive smokescreen behind which to conceal business as usual” (Alderman and Ivory, 2007). However, these criticisms have not attempted to contest the potential advantages. Similarly, when considering the definitive advantages of RC, the qualification is often given that they are conditional depending on application and context, and that there is never a universally applicable solution (Thompson and Sanders, 1998, Bresnen, 2007, Hobbs and Andersen, 2001, Morgan, 2009). Nonetheless, not withstanding the apparent benefits of RC, its use in the industry remains comparatively rare (Challender et al., 2014). Furthermore, as a result of vulnerable economic conditions, the popularity of the partnering approach has been reported in some markets to be in decline (Rics, 2012), with risk averse practices, sceptical views on collaboration, and the abuse of collaborative relationships thought to be significant factors in this regard (Challender et al., 2014).
2.3.4 Alliance procurement

Alliance procurement is a form of relational contracting that is becoming increasingly utilised within the Australian Construction Industry. An alliance arrangement is described as a long-term strategy between client, contractor and supply chain (Rowlinson and Cheung, 2004) whereby risks and rewards are shared, and common goals are established in the pursuit of a particular outcome or project (Walker and Hampson, 2003, Peters et al., 2001, She, 2013). An Alliance arrangement aims to use contractual mechanisms to appropriately share risks and foster innovative and non adversarial behaviour (Davis and Love, 2011), with trust as a risk mitigating measure fundamental in this regard (Chow et al., 2012). To this end, trust is considered to be the means by which collaborative partners can connect, and is essential for facilitating relational exchange (Silva et al., 2012). The definition provided by Hutchinson and Gallagher (2003) further explains the fundamentals of a project alliance:

“an integrated high performance team selected on a best person for the job basis; sharing all project risks with incentives to achieve game breaking performance in pre-aligned project objectives; within a framework of no fault, no blame and no dispute; characterised by uncompromising commitments to trust, collaboration, innovation and mutual support; all in order to achieve outstanding results”.

Factors considered to be essential for successful Alliancing include creativeness, trust, commitment, interdependence, collaboration, open and honest communication, cooperation, relationships and relationship management, joint problem and conflict resolution, team selection, knowledge sharing, goal alignment, team work, strong leadership, a win-win philosophy, equity, and total organisational buy in (Chow et al., 2012, Hampson and Kwok, 1997, Howarth et al., 1995, Peters et al., 2001, Rowlinson and Cheung, 2004, Rowlinson and Cheung, 2005, Rowlinson et al., 2006, She, 2013, Yeung et al., 2007). The influence of trust and other dimensions of trust are widely acknowledged in this regard, and are categorised within the “soft” elements that are said to form one part of an alliance arrangement (Yeung et al., 2007). These “soft” elements are of particular significance within the context of this research.

The second part of an alliance arrangement concerns the “hard” contractual elements relating directly to legal positions (Love et al., 2011, Yeung et al., 2007). So despite the collaborative approach that is fundamentally at the heart of any alliance and the identified “soft” elements, the rights and obligations of the contracting parties are nonetheless still spelt out in strictly
legal terms. These hard elements of the contract are where the compensation model defining the agreed pain-share, gain-share arrangements is spelt out. The compensation model provides the supporting structure required for successful Alliancing. To this end, the pain-share, gain-share agreement facilitates a collective sharing of risk, and fosters an attitude whereby project participants place the overall interests of a project above their own individual interests (Sakal, 2005, She, 2013). Furthermore in this regard, the legal components of the contract often also include a “no dispute” clause in which the contracting parties waive their rights to litigation (except in instances of wilful default), with this arrangement further fostering the fundamental themes of trust and goal alignment (Rowlinson and Cheung, 2005, Rowlinson et al., 2006, She et al., 2012). However, it should be noted that for a no blame culture to be successfully implemented, relationship management is the key. That is, without a clear relational vision and a positive approach to relationship management, a no claims contract cannot exist (Rowlinson et al., 2006). Therefore merely adding a no dispute clause in the alliance contract is not enough, but rather it is the softer elements of the alliance and how they are instilled and fostered in the alliance team culture that is essential for ultimate project success. In this regard, the terms that define an alliance contract appear to exclude or certainly ignore the softer interpersonal aspects of relationships, of which trust, as a response to risk exposure, is key.

In spite of the success of many alliance projects, recent times have seen a decline in the use of this form of procurement in the delivery of infrastructure projects. Issues of trust are considered to be instrumental in this regard, and the ability for the pain-share, gain-share arrangement to align behaviours and values in project teams has being called into question (She, 2013).

2.4 Conclusion

In considering the defined research question, this chapter has provided a thorough review of existing literature in terms of trust and its dimensions. To this end, themes of trust have been categorised within human, attributional, and contextual variables, with issues of trust failure also deemed to be significant. A detailed framework of trust themes has subsequently been developed (Figure 2.4, and Appendix 1), and will be central to the development and implementation of the adopted methodology, as described in Chapter 3.
The contextual specifics of procurement mechanisms have also been explored, with fundamental principles of transactional and relational procurement approaches considered in terms of trust and its influence. Understanding in this regard has provided further guidance in the development of an appropriate methodology.

The completed literature review has rigorously examined the concept of trust as it relates to a construction management context, providing the context and background for developing and implementing the adopted methodology. Furthermore, the wide-ranging and critical review of the available literature extends the knowledge upon which the research is founded, which in turn enhances the validity of the conclusions reached.
3 METHODOLOGY

3.1 Introduction
In considering the identified research problem, Chapter 2 has provided a detailed review of available literature regarding trust within a construction context. Informed in this regard, this chapter will describe the adopted methodology and methods developed and implemented in response to the stated research question, aims and objectives.

Theoretical considerations will be examined in detail in order to gain a comprehensive understanding of the theoretical principles upon which this research endeavour will be founded. To this end, the theoretical stance adopted will be clearly articulated and justified.

The overall research structure will be explicated and rationalized, with the respective components and processes also defined and explained. A qualitative content analysis methodology framed within an etic lens will be implemented in order to shed light on the influence of trust on the prescription of project management as defined by PMBOK. A phenomenological interview study framed within an emic lens will be implemented in order to explore the influence of trust on the practice of project management, via a qualitative examination of lived experience (Robinson and Reed, 1998, Welman and Kruger, 1999).

Theoretical principles underpinning the respective methodologies will be further examined, in order to fully explain the fundamentals of the respective methods, with justification subsequently also provided. Via an understanding of these fundamental principles, a thorough and robust approach to the research undertaking will be demonstrated, and the validity of the ultimate research outcomes will be further enhanced.
3.2 Methodological design – Theoretical considerations
In order to ensure robust and meaningful outcomes, the underlying philosophies and theoretical perspectives of the research design are significant. To this end, the ontological and epistemological basis for the proposed research is fundamental, and ultimately provides the framework for recognising truth and knowledge (Gray, 2014). It ensures the relationship between the key components of research is understood, and allows the researcher to coherently discuss theoretical perspectives and approaches to social phenomena, while also defending their own position (Grix, 2002).

While considering the research background, the adopted definitions, and the philosophical position outlined previously, the following sections also examine the theoretical concerns of the research design and the subsequent implications for their implementation within the scope of this study.

3.2.1 Ontology
Ontology is essentially concerned with what we know to be true and what it is that constitutes the social reality of the topic under investigation. Blaikie (2000, p. 8) defines ontology as:

“claims and assumptions that are made about the nature of social reality, claims about what exists, what it looks like, what units make it up and how these units interact with each other. In short, ontological assumptions are concerned with what we believe constitutes social reality”.

The ontological assumptions of this research are grounded in the researcher’s own experiences and beliefs, with this ontological perspective informing the theoretical perspectives subsequently considered herein (Opfer, 2008).

3.2.2 Inductive and deductive reasoning
In striving for the development of new knowledge, the paradigm of enquiry founded on either an inductive or deductive approach is significant within the context of any chosen study. The origins of a deductive approach are founded on a universal understanding of a situation, with the research process informing the specific details. Conversely, the origins of an inductive approach are founded on a disconnected understanding of a situation, with the research process providing a comprehensive understanding (Gray, 2014). Ultimately, the deductive
approach aims to test a theory, while the inductive approach aims to build a theory (Saunders et al., 2003).

In contrast to mature fields of enquiry, the investigation of any new line of enquiry is afforded no meaningful or useful theories from which to infer propositions for testing. Hence, understanding must begin with collecting data and facts, and then trying to uncover some order within them (Marshall, 1997). Given the precepts of this study, the inductive approach is deemed appropriate, and will provide the opportunity to gain a deep understanding of the chosen topic of trust within a construction management context (Saunders et al., 2003). The inductive process is also considered to complement qualitative research, which utilises a range of data and considers the problem from different perspectives (Gray, 2014, Easterby-Smith et al., 2002). This adds further support to the chosen inductive approach given the desire to investigate the influence of trust on accepted project management prescription (PMBOK), along with the phenomenon of trust via the lived experiences of construction practitioners. With that said, the fundamentals of a deductive approach need not be ignored (Mayring, 2000, Patton, 2002), and a combination of inductive and deductive reasoning is considered acceptable where appropriate (Daly, 2007).

3.2.3 Epistemology
In order to achieve meaningful outcomes and compelling new knowledge in response to the identified research problem, the epistemological stance and consequent theoretical perspective, methodology and method(s) adopted by the researcher are critically important (Rowlands, 2003, Crotty, 1998). While ontology aims to understand what is, epistemology attempts to understand what it means to know, and provides a philosophical foundation for determining what forms of knowledge are justifiable, well founded and adequate (Gray, 2014). Blaikie (2000, p. 8) defines epistemology as:

“the possible ways of gaining knowledge of social reality, whatever it is understood to be. In short, claims about how what is assumed to exist can be known”.

The epistemological position adopted in any research is considered to be categorised as one of objectivism, subjectivism or constructivism (Crotty, 1998). Each of these will be discussed herein, in order to clarify as well as justify the epistemological stance taken within the context of this study. Ultimately, careful deliberation and appropriate selection in terms of epistemology will assist to clarify issues of research design, including research tools,
overall structure, and data collection and interpretation. A clear understanding of research philosophy in this regard will also assist in determining which research designs will and will not satisfy the objectives of the study (Easterby-Smith et al., 2002, Grix, 2002).

3.2.3.1 Objectivism

Objectivism is founded on the belief that knowledge is objective and absolute (Opfer, 2008), and that it exists irrespective of our consciousness of it (Gray, 2014). Research adopting this position aims to discover this tangible truth (Gray, 2014), while also determining causes and effects, seeking explanations, and attempting to test identified theories or hypotheses (Opfer, 2008). Objectivism is closely associated with the theoretical perspective of positivism (Crotty, 1998). Positivism holds at its core the view that the social world exists externally to the researcher, and that subsequent knowledge in this regard can be directly measured through observation and therefore empirical investigation (Gray, 2014).

Within the context of this study, trust is considered to be a psychological state that exists within the minds of dyadic actors operating within a construction management environment (Rosseau et al., 1998). Hence, the reality of trust is not readily or objectively observable, and does not lend itself to any form of empirical investigation (Grix, 2002). Furthermore, from a theoretical perspective in terms of accepted project management standards for the prescription of project management practice, an investigation regarding trust and its dimensions requires critical analysis, rather than merely tangible identification. The objectivism epistemology is therefore not considered appropriate.

3.2.3.2 Subjectivism

Subjectivism is founded on the view that all individuals have a contrasting understanding of what we know (Opfer, 2008), and that meaning is not knowingly constructed by any given subject, but rather derived within a collective unconsciousness (Gray, 2014). That is, knowledge does not transpire as a result of the interaction between a subject and the outside world, but rather it is mandated on the object by the subject (Gray, 2014). The subjectivist position therefore aims to obtain meaning through an understanding of others in their own terms (Opfer, 2008). The theoretical perspective of postmodernism is considered to be closely associated with subjectivism (Crotty, 1998). The term postmodernism has varied meanings and applications, and is often considered to be somewhat ambiguous (Crotty, 1998). Within the context of the nature of knowledge, a postmodernist position believes that what we know is influenced by what we believe. Furthermore, the reality of the world does
not function according to rational laws, and the most exigent of social issues are beyond the limits of scientific approaches (Marsen, 2006).

Within the context of this study, the subjectivist epistemology is also not considered to be appropriate. Trust is a psychological state (Rosseau et al., 1998) that exists in the consciousness of stakeholders interacting within the construction management environment. In this regard, the reality of trust is indeed influenced by the relations between construction practitioners themselves, as well as the exchange between these respective stakeholders and the outside world (including accepted project management standards of prescription, and respective procurement mechanisms) (Coleman, 1988, Grix, 2002, Maloney et al., 2000). It is not merely derived by some collective unconsciousness, which is unknowingly mandated by personal beliefs.

3.2.3.3 Constructivism

Constructivism is founded on the idea that understanding comes through our interactions (Opfer, 2008), and that truth and explanations of the truth do not exist in some extraneous world, but rather are formed as a result of the subject’s interaction with the world (Gray, 2014). Constructionists distinguish reality and meaning on the basis that it is socially constructed (Saunders et al., 2003, Schwandt, 1998a), as apposed to being discovered (Gray, 2014). That is, constructivism is concerned with “constructing knowledge about reality, not constructing reality itself” (Shadish, 1995, p. 67). The constructionist epistemology ultimately rejects the objectivists’ viewpoint (Crotty, 1998), in which all meaning is objective (Opfer, 2008), and exists irrespective of our consciousness of it, waiting to be revealed (Gray, 2014).

From a constructionists’ perspective, the constructions of knowledge and understanding exist within the minds of individuals (Guba and Lincoln, 1989), and people construct meaning in contrasting ways, even when considering the same phenomenon (Gray, 2014, Crotty, 1998). The constructionist paradigm is essentially “a perspective that emphasizes how different stakeholders in social settings construct their beliefs” (Schutt, 2006, p. 44), and the role of the researcher is therefore to reconstruct, examine and critique the views of participants in a manner that facilitates understanding and results in the development of meaningful results and outcomes (Guba and Lincoln, 1989).

Within the context of this study, examining the influence of trust (in project management prescription and practice), the constructionist epistemology is considered to be appropriate.
Trust is considered to be a psychological state (Rosseau et al., 1998) and concerns the interactions between dyadic actors working together towards project objectives in a construction management framework (Coleman, 1988, Grix, 2002, Maloney et al., 2000). It cannot therefore be readily identified or observed, nor can it be tangibly measured (Grix, 2002). The human element of trust is consequently significant. In aiming to shed light on the ontology of trust within the scope of this study, the constructionist paradigm will allow the views of individual stakeholders to be reconstructed and understood in a way that a common consensus is reached, and meaningful and robust outcomes realised (Guba and Lincoln, 1989). Trust cannot exist independently in an objective and absolute reality, but rather the reality of trust exists within the minds of stakeholders, and is influenced by the conscious interactions between them and the outside world (Coleman, 1988, Grix, 2002, Maloney et al., 2000). The constructionist position will therefore allow the research to engage with the social reality of trust through the lived experiences of construction practitioners within a construction management environment, while also considering the influence of accepted standards for mandating project management processes and practices.

The theoretical perspective of interpretivism is considered to be closely associated with a constructionist epistemology (Crotty, 1998). Further discussion in this regard will be provided in the following section.

3.2.4 Theoretical perspective – Interpretivism

The theoretical perspective adopted for this research essentially provides the foundations for subsequent methodological design. Crotty (1998, p. 3) defines theoretical perspective as “The philosophical stance informing the methodology and thus providing a context for the process and grounding its logic and criteria”.

The theoretical perspectives of positivism and postmodernism have been briefly discussed in the preceding section, with their lack of suitability within the context of this study similarly explained. In line with the epistemological position of constructivism, the theoretical perspective of interpretivism has been adopted.

An interpretivist approach ultimately strives for “culturally derived and historically situated interpretations of the social life-world” (Crotty, 1998, p. 67). Social reality in this regard is considered to be constructed, “based on a constant process of interpretation and reinterpretation of the intentional, meaningful behaviour of people – including researchers”
(Smith, 1989, p. 85). Reality within an interpretivist method of enquiry essentially exists in the interplay between the subjective mind and the objective outside world (Gray, 2014, Barone, 1992, Guba, 1990). To this end, the world of social inquiry is interpreted via the codification arrangements of the mind (Williams and May, 1996), and the researcher can therefore not be isolated from the phenomenon under investigation (Smith, 1989).

Furthermore, the interpretivist position understands that the social reality of the world is too complex to be confined by a set of observable laws, and that research outcomes which can be widely generalised are less important than gaining a deep understanding of the real conditions behind any reality (Gray, 2014).

Ultimately, the interpretivist researcher must strive to gain understanding and knowledge of social reality via the experiences and perspectives of those who live it (Gray, 2014). Through a process of interpretation, and subsequent construction of meaning, the resultant implications embodied in the actions of individuals can be revealed (Schwandt, 1998a). The researcher must cast light on the subjective meanings or realities which inform the actions of individuals, in order to understand these actions and achieve meaningful research outcomes (Saunders et al., 2003). As there are “no facts without values, and different values can actually lead to different facts” (Smith, 1989), all social research cannot be interpretation free. In constructing subjective meaning in this manner, the researcher is integral to the interpretive process, and in this regard, the understood reality should not be considered to be any more valid than that of others (Schutt, 2006). Nor should it be considered to be an exclusive representation of any one reality (Guba and Lincoln, 1989), as, within a social world, researchers comprehend things differently (Rubin and Rubin, 1995).

It is therefore appropriate to recognise the human aspect to interpretivist research, along with its related fault.

“An interpretive researcher cannot come to a study with a pre-established set of neutral procedures but can only choose to do some things as apposed to others based on what seems reasonable, given his or her interests and purposes, the context of the situation, and so on” (Smith, 1989, p. 157).

Interpretivist research can consequently not aim for indisputable truths (Guba and Lincoln, 1989), but rather must aim for coherence, and a foundation of truth evaluated on social agreement at any given time or place (Sparkes, 1992).
“For interpretive inquiry, the basis of truth or trustworthiness is social agreement; what is judged true or trustworthy is what we can agree, conditioned by time and place, is true and trustworthy” (Smith, 1989, p. 386).

This “coherence theory of truth” (Sparkes, 1992) must be central to the design of interpretivist research methodologies and methods, particularly with regard to researcher bias in terms of data collection and analysis. Further discussion in this regard will be provided in the following sections.

In considering the phenomenon of trust that is central to this research, the interpretivist approach will support the philosophical position adopted, while also providing guidance and justification in terms of research methodology and methods (Grix, 2002). Trust is a psychological state (Rosseau et al., 1998) that exists within the minds of construction practitioners. It is influenced by context, including the interactions that take place between stakeholders when managing construction projects (Coleman, 1988, Grix, 2002, Maloney et al., 2000). Trust cannot be observed, nor can it be readily measured (Grix, 2002). Fundamentally, the interpretivist approach which accepts the influence of both actors and structures (Grix, 2002) will allow knowledge and understanding regarding the concept of trust to be revealed through the experiences of those who live it (Gray, 2014). Via a process of interpretation and consequent abstraction of meaning embodied in the actions and experiences of construction practitioners (Schwandt, 1998a), a deep level of understanding regarding the real conditions informing the complex reality of trust within a construction context will be revealed (Gray, 2014).

3.2.5 Emic or Etic approach
In considering the design of this study, the theoretical distinctions between an Emic or Etic approach are deemed important. The principles of these respective approaches have historically being central to research pertaining to social science, culture and human behaviour (Harris, 1976, Helfrich, 1999, Morris et al., 1999). The inside, or emic, perspective aims to gain understanding from the “native’s point of view” (Malinowski, 1922), and identify phenomenal distinctions forthcoming from the actors themselves (Harris, 1976). While the etic, or outside, perspective aims to provide meaning through anthropological approaches, which, through observation, uncover phenomenal distinctions judged appropriate to scientific observers (Harris, 1976, Morris et al., 1999). Ultimately, an emic approach seeks
to gain knowledge through the actor’s self understanding (Morris et al., 1999), and hence methods are applied which drill down into their inner consciousness, beliefs and behaviours (Harris, 1976, Pike, 1967). In contrast, the etic approach looks to provide outcomes which can be generalised to a wider populace (Morris et al., 1999). To this end, methods which are founded on a model of static influence (Helfrich, 1999) are applied, and facilitate observations in the same manner across different populations, and within different environments (Morris et al., 1999, Pike, 1967).

In this research, with its objective to cast light on the influence of trust on project management prescription and practice, both the etic and emic methods are deemed appropriate. Hence, two distinct methodologies based on these respective approaches will be developed and applied.

In terms of project management prescription (PMBOK), an etic-based approach is proposed. With reference to extant literature pertaining to trust, and the prescriptive intent of PMBOK in terms of mandating project management processes, analysis from an external viewpoint will yield valid, self-evident and universally applicable outcomes (Morris et al., 1999). Furthermore, the prescriptive intent of PMBOK also aligns with the fundamental principles of an etic approach, which ignore contextual specifics (Helfrich, 1999). Hence an etic-based approach is appropriate for this component of the research, and will ultimately shed light on the influence of trust in terms of accepted project management prescription.

In terms of project management practice, an emic-based approach is proposed. It is not possible to directly observe trust, and hence methods founded on etic principles will not suffice (Harris, 1976). Similarly, as this research is aiming to move beyond widely applicable commonalities or a generalised description of trust and its influence, the etic approach is not considered compatible with gaining a deep level of understanding of trust as it is experienced by individual project participants (Morris et al., 1999). Furthermore, the accepted static influence adopted within an etic approach ignores the influence of contextual specifics (Helfrich, 1999), and hence does not align with the philosophical and theoretical perspectives of this research, as outlined previously. In contrast, the fundamentals of an emic approach are indeed appropriate within the context of project management practice. As the phenomenon which is trust cannot be observed, understanding in this regard can only be meaningfully investigated and ultimately obtained via the perspectives of those experiencing it (Cohen and Daniels, 2001). Additionally, the emic approach to culture and context is also
significant and aligns well with the interpretive phenomenological approach adopted for this study, whereby all humans exist within, amongst and indivisible from a world of being (Lopez and Willis, 2004, Maggs-Rapport, 2001). In this regard, the emic approach recognises that culture and context are not merely external factors whose effects on an individual need to be examined, but rather they are fundamental to human behaviour (Gergen, 1985). To this end, behaviour cannot be divorced from cultural context, as it is essentially governed not by causes which can be investigated, but instead by reasons which are within the command of the acting person, and hence must be understood via the perspective of the individual under investigation (Helfrich, 1999). The emic approach is therefore apposite for this component of the research, and will ultimately examine the influence of trust through the lived experiences of practitioners functioning within a variety of construction projects, and under various procurement mechanisms.

3.3 Research structure and methodological design
Following on from the previously articulated theoretical aspects of the research design, issues pertaining to its practical application also need to be examined and determined, in response to the stated research aims and research objectives. Taking into consideration the research problem as it has been defined, Figure 3.1 provides a diagrammatical overview of the research structure on which the developed methodology is founded. To this end, the selected methodology and methods will ultimately be driven by the research question, rather than ontological and epistemological positions (Grix, 2002). The following sections will provide details regarding the practical application of the methodologies that have informed this study, along with the theoretical principles on which the respective methodologies are founded. Additional details regarding the adopted methodologies and methods will also be included in the individual publications. Ultimately, the design and application of the adopted methodologies will facilitate understanding regarding the influence of trust on; a) the prescription of project management as defined by PMBOK (qualitative content analysis); and b) the practice of project management as encountered by those who live it (interview-based phenomenological investigation) (Gray, 2014).
3.4 Literature review and trust framework

3.4.1 Literature review

The completed literature review included in Chapter Two is integral to the development and subsequent application of the proposed research methodologies. Informed by existing literature, a comprehensive understanding regarding trust and dimensions of trust relevant to the management of projects within a construction context has being attained. Additionally, the significance of trust within this context has also been highlighted, with successful project outcomes shown to be influenced to a large degree by trust (Kramer, 1999, Pinto et al., 2008,
Wicks et al., 1999). Hence, existing literature regarding trust has provided further justification for the overall objectives of this research. To this end, the outcomes of the literature review have provided clarification in terms of the necessary focus of this research in responding to the gaps identified in current knowledge. Subsequently, an appropriate methodology can be developed with confidence, and outcomes conceived from reasoned and pragmatic evidence can be presented. Furthermore, the validity of the conclusions reached are strengthened as a result of the comprehensive understanding of trust on which they are founded (Barron, 2006, Rudestam et al., 2001).

3.4.2 Trust framework codes
The completed literature review has ultimately provided a detailed account of accepted theory pertaining to trust, and dimensions of trust that are central to project processes in the delivery of construction projects. Issues of trust formation, maintenance, failure and repair have been identified, and via a process of thematic analysis, a consolidated framework of trust themes, including main theme codes and detailed theme codes, has being developed. Figure 3.2 provides details of the main theme codes encapsulated within the trust framework. The complete trust framework inclusive of both main theme codes and detailed theme codes is included in Appendix 1. This trust framework is central to the application of the developed research methodologies, and is considered pivotal to the eventual outcomes of this study.
The process of thematic analysis applied to the literature review has essentially aimed to search for and identify themes considered significant for the description of the phenomenon which is trust (Daly et al., 1997). In this regard, conceptual depth through detailed interpretation has ultimately provided a composite picture of trust as a phenomenon (White and Marsh, 2006). The boundaries for the thematic analysis process have been defined by the literature review, and by way of meticulous “reading and rereading” (Rice and Ezzy, 1999, p. 258) pertinent trust themes have been identified, and a trust framework applicable within a construction management context subsequently created.

Central to the creation of the trust framework was the process of amalgamating the identified themes and dimensions of trust into a consolidated code list (Boyatzis, 1998). The created codes aim to capture the “qualitative richness of the phenomenon” (Boyatzis, 1998, p. 1)
which is trust, and through a linear approach, utilise open coding to expose themes, and axial coding to expand and explain specific detail (Strauss and Corbin, 1990). By way of reviewing the literature, consolidating it into a synopsis of key themes, and developing the refined code list, multiple passes of the data has being achieved (Rice and Ezzy, 1999), and a robust and valid trust framework subsequently produced.

The created trust framework is a critical tool in terms of responding to the research objectives, and implementing the proposed research methodologies and methods (i.e. content analysis and interview based phenomenological investigation). To this end, the code list contained in the trust framework will be systematically applied to the respective data sources (Boyatzis, 1998), as outlined in Figure 3.3. Adopting an etic approach and within the context of project management prescription, the trust framework will be applied via a qualitative content analysis of PMBOK, which will ultimately provide confirmation or otherwise of the recognition of trust-related concepts. Adopting an emic approach and within the context of project management practice, the trust framework will be similarly applied via a phenomenological interview study. Utilising both confirmatory and exploratory coding approaches, and giving consideration to alternate procurement mechanisms, this methodological approach will ultimately examine the lived experiences of trust-related concepts during the conduct of projects. Further details regarding the respective methodologies will be provided in the following sections.
Figure 3.3 Procedure for systematic application of trust framework to respective data sources
3.5 Qualitative content analysis methodology

The proposed qualitative content analysis (Kolbe and Burnett, 1991) of the internationally recognised standard for project management, PMBOK, will ultimately examine and explain how trust influences the prescription of project management in construction projects. Via application of the developed trust framework to the data source that is PMBOK, trust-related themes within the context of accepted project management prescription will be examined. Consequently, the extent to which PMBOK reflects trust concepts established elsewhere in the literature will be determined. Given the acceptance of PMBOK as a widely utilised and recognised standard for project management best practice (Crawford, 2000), its selection as a data source in the examination of trust in this context is justified (Patton, 2002).

3.5.1 Content analysis – PMBOK

Content analysis is essentially a research method which applies logical and methodical procedures in order to unlock valid inferences and provide understanding regarding themes or ideas contained within text-based documents (Webber, 1990). Supporting the adoption of this methodology to this research undertaking is the definition provided by Kolbe and Burnett (1991, p. 243), who define content analysis as:

“An observational research method that is used to systematically evaluate the symbolic content of all forms of recorded communication”.

By systematically applying the codes contained within the developed trust framework, evaluation of PMBOK with respect to trust and how it mandates the behaviours and experiences of project participants can be undertaken.

In adopting the content analysis methodology, a qualitative approach will be embraced, which will move beyond a purely quantitative, statistical analysis. That is, rather than simply identifying where the word trust appears (Webber, 1990), this approach will focus on the messages and meanings forthcoming from the data source, with consideration to the “content or contextual meaning of the text” (Hsieh and Shannon, 2005, p. 1278). To this end, a critical analysis of PMBOK with regards to trust and its dimensions will be presented, which will ultimately “provide knowledge and understanding of the phenomenon under study” (Downe-Wamboldt, 1992, p. 314). Table 3.1 outlines fundamental characteristics that typically underpin
the selection of a qualitative content analysis methodology, providing justification as well as guidance in terms of applying this methodology within the context of this study.

Table 3.1 Characteristics of qualitative content analysis

<table>
<thead>
<tr>
<th>Category</th>
<th>Qualitative content analysis characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research approach</td>
<td>Inductive; Data gathering and analysis is driven by the defined research question, with prospective themes, and/or other questions likely to surface through meticulous examination of the data</td>
</tr>
<tr>
<td>Research orientation</td>
<td>Naturalist or humanist; hermeneutics</td>
</tr>
<tr>
<td>Objective</td>
<td>“To capture the meanings, emphasis, and themes of messages and to understand the organisation and process of how they are presented” (Altheide, 1996, p. 33).</td>
</tr>
<tr>
<td>Data: Nature</td>
<td>Practical, syntactic or semantic categories; naturally occurring texts or text created for a project</td>
</tr>
<tr>
<td>Data: Selection</td>
<td>Utilise purposive sampling to identify comprehensive, accurate answers to research questions, with the aim of presenting the big picture</td>
</tr>
<tr>
<td>Categorisation schema</td>
<td>Coding scheme typically developed via a process of close, iterative reading in order to distinguish important concepts and patterns</td>
</tr>
<tr>
<td>Coding</td>
<td>Subjective; Utilise memos to record and verify perceptions and formulations; incorporate techniques that enhance the credibility, dependability, transferability, and confirmability of the results</td>
</tr>
<tr>
<td>Argument basis for proof</td>
<td>Grounded in the data; provide an accurate and thorough account of the specific situation; where appropriate, utilise triangulation via multiple data sources; possibly utilise techniques which develop grounded theory regarding the identified concepts, and to identify hypothesis that can be investigated deductively; Presentation “supports interpretations by weaving quotes from the analysed texts and literature about the contexts of those texts into their conclusions, by constructing parallelisms, by engaging in triangulations, and by elaborating on any metaphors they can identify” (Krippendorff, 2013).</td>
</tr>
<tr>
<td>Use of computers</td>
<td>As annotation and searching aids</td>
</tr>
</tbody>
</table>

Source (White and Marsh, 2006, p. 35-36)
In applying the content analysis methodology, the potential failings of this approach have been contemplated. In this regard, issues of classification and reliability are acknowledged to be significant.

The data reduction process by which large passages of text are classified into smaller content categories can be problematic. Consistency in terms of classification can result from ambiguity of word or category definitions, or other designated coding conventions (Webber, 1990). In this regard, the codes delineated in the developed trust framework are critical, and certainty in terms of the defined open and axial codes will overcome potential classification issues when systematically analysing the contents of PMBOK.

In terms of reliability, issues of stability and reproducibility are important when designing and implementing a content analysis study (Krippendorff, 2013). Stability refers to the degree to which classification results remain constant over time, with discrepancies in this regard leading to unreliability. Stability can be confirmed via multiple coding efforts by the same coder, however, reliability in this regard remains weak while ever coding is limited to only one coder. Carrying more weight in terms of reliability therefore is reproducibility, which refers to the degree to which classification results remain constant when coded by multiple coders. While stability measures the constancy of an individual’s understandings, reproducibility measures the constancy of shared understandings by multiple coders (triangulation). Factors such as inconsistencies in the defined coding rules or data source generally contribute to issues of unreliability, while cognitive differences and/or errors on the part of the coder(s) can also be detrimental in this regard (Webber, 1990). Hence, the importance of the developed trust framework (and subsequent codes) and its application to PMBOK is again reinforced, along with triangulation via multiple coders.

In terms of applying the content analysis methodology within the context of this study, three accepted approaches have been considered; conventional, directed, and summative. Figure 3.4 presents the fundamentals of the respective approaches, while also providing justification for the directed approach which is to be adopted. The codes contained within the developed trust framework have originated from the completed literature review. By way of applying the directed content analysis approach, the data analysis process will frame trust within the context of PMBOK, and validate and extend the conceptual theory of trust within this context (Hsieh and Shannon, 2005). While the proposed qualitative content analysis is essentially inductive in its approach, deductive reasoning which is inherent in the directed approach need not be excluded
(Mayring, 2000, Patton, 2002), and a combination of inductive and deductive reasoning has therefore being adopted (Daly, 2007). To this end, generating the trust framework and subsequent codes from literature is fundamental to the qualitative analysis of PMBOK (Berg, 2001).

**Figure 3.4 Fundamentals of content analysis approaches.** Adapted from (Hsieh and Shannon, 2005, p. 1286)

The unit of analysis is also of practical significance to the qualitative content analysis approach, and defining the coding unit is considered fundamental to the design of this methodology (Webber, 1990). The unit of analysis essentially ascribes the basic unit of text to be categorised during the analysis of the chosen data source. Before meanings within text can be coded, they must first be unitised, and in this regard, differences in the unit designation can influence coding choices, and ultimately also research outcomes (De Wever et al., 2006, Zhang and Wildemuth, 2009). Given that a qualitative, rather than quantitative approach is proposed when applying the framework of trust codes to PMBOK, the unit of analysis will not be individual linguistic units, but rather individual themes contained within the document (Zhang and Wildemuth, 2009). That is, extracts of text within PMBOK which express an idea will be coded as themes corresponding to the open and axial codes predefined in the developed trust framework (Minichiello et al., 1990).
Findings regarding the influence of trust within the context of project management prescription will be presented in publication number one.

3.5.2 Limitations
In order to achieve meaningful and reliable results, the limitations of the developed qualitative content analysis methodology need to be identified and addressed. In this regard, Kolbe and Burnett (1991, p. 244) have articulated the inherent weaknesses of this approach.

“This method is quite susceptible to the effects of researcher biases, which in turn can effect decisions made in the collection, analysis, and interpretation of data. Given that researchers wish to draw inferential conclusions from data, the existence of these biases can affect a study’s contribution to knowledge”.

With regards to data collection, analysis and interpretation, care must therefore be taken in order to ensure the credibility of findings (White and Marsh, 2006). To this end, a self awareness on the part of the researcher is considered a powerful tool in the pursuit of objective and robust outcomes (Cohen and Daniels, 2001). In this regard, issues of abstraction and researcher triangulation are deemed significant when applying the trust framework to the data source that is PMBOK.

3.5.3 Abstraction and triangulation
The process of abstraction in which the researcher abstracts meaning via interaction with the data is fundamental to the emergence of new themes in any qualitative research endeavour (Morse and Richards, 2002). To this end, the proposed qualitative data analysis approach is ultimately a means of knowledge management, whereby systematic methods are utilised in order to transform data into information, information into knowledge, and knowledge into understanding (Chenail, 2012, Davenport and Prusak, 1998). The adopted methodology must clearly define the process for abstracting meaning from the respective data source (Daniels, 2001), and aim to achieve “conceptual consistency between observation and conclusion” (White and Marsh, 2006, p. 38-9). Ultimately, results must be confirmed by the data itself, and not the subjective influence of the researcher. To this end, the process of analysis and interpretation, along with the subsequent coding outcomes, will provide self-evident results in terms of applying the trust framework to PMBOK.
The concept of researcher triangulation is consequently significant in terms of providing validation, demonstrating reliability, and increasing credibility (White and Marsh, 2006). Past research has adopted triangulation in varying capacities, with different philosophical approaches evident in this regard. It has been argued that triangulation should be employed in order to provide a more comprehensive and profound understanding of the respective phenomenon under investigation (Olsen, 2004). Alternatively, it has also being described as a means of validation that can be used to enhance the credibility and certainty of any study (Arksey and Knight, 1999, Denzin, 1978, Golafshani, 2003, Smith and Kleine, 1986).

Given that the coding process is fundamentally a personal endeavour on the part of the researcher, (Cohen et al., 1996), subjectivity is of primary concern when applying the developed trust framework to the data source of PMBOK. To this end, the practice of researcher triangulation is considered important and appropriate. Harvey and MacDonald (1993) describe triangulation as two or more researchers utilising the same research technique. In this regard, the use of multiple coders provides a robust and convincing means of ensuring the reliability of the coding process. Multiple coders will ultimately reduce the effects of coder subjectivity, increase coding confirmation, and enhance research credibility (Morse and Richards, 2002).

3.5.4 Application of methodology

As outlined previously, the open and axial codes contained in the developed trust framework are central to the examination of how trust influences the prescription of project management as defined by PMBOK. In applying the developed methodology, a clearly defined approach was adopted based on the systematic application of the trust framework to the data source. To this end, a number of key principles apply. Firstly, triangulation via multiple coders was carefully considered and adopted within the applied methodology. Secondary coders were carefully selected to ensure they were sufficiently experienced and informed regarding the research methodology that was to be adopted. Discussions subsequently took place pertaining to the overall research effort, in order to educate secondary coders of the defined methodological approach that was to be applied. To this end, the first pass of the data aimed to reveal and establish open codes, i.e. first pass coding, with a level of abstraction in terms of the open codes concurrently undertaken. A second pass of the data subsequently aimed to add detail codes to “code trees”, i.e. second pass coding. Regular coding meetings between the respective researchers were utilised as required in order to compare coding outcomes and resolve any
identified coding conflicts. By way of establishing “concept proxies”, clear coding outcomes were defined, and coding conflicts minimised.

The resultant coding outcomes were recorded in coding tables, of which an extract sample is included in Appendix 2. Sample coding exercises utilising a secondary coder were also routinely undertaken as required, with example results included in Appendix 3.

These tables provided details regarding the specific analysis of the coding, with coding “hits” clearly and pragmatically linked with relevant sections and passages of text within PMBOK, with an explanation of each occurrence also provided. Coded themes of trust on which PMBOK was silent were also subsequently highlighted.

The results forthcoming from this component of the research were presented in publication number one. To this end, issues of trust acknowledged by PMBOK were identified. Similarly, and of likely greater consequence, issues of trust which remain unaddressed by PMBOK were also highlighted. The qualitative content analysis methodology has ultimately responded to the identified research aim and objectives, in terms of examining and explaining the influence of trust on the prescription of project management in construction projects.

3.6 Phenomenological interview methodology
The proposed phenomenological interview study will examine and explain how trust influences the practice of project management in construction projects, via the lived experiences of construction practitioners. With consideration to alternate procurement mechanisms, and by utilising both confirmatory and exploratory analytical approaches founded on existing literature (i.e. the developed trust framework), the phenomenon which is trust will be investigated. In developing and applying the adopted methodology, the fundamental principles of phenomenology have been considered, with appropriate methodological decisions made accordingly.

3.6.1 Phenomenology
Complementing the interpretivist approach of this research is the theoretical perspective of phenomenology (Gray, 2014). Phenomenology is a descriptive and qualitative examination of lived experience (Robinson and Reed, 1998, Welman and Kruger, 1999), which in the absence of pre-existing theories or hypotheses, aims to describe and attribute meaning to the topic of investigation (Wertz et al., 2011). Founded on the perspectives of the people immediately
involved (Crotty, 1996, Spiegelberg, 1982), phenomenology facilitates a critical reflection on conscious experience, and uncovers the essential invariable characteristics of that experience (Jopling, 1996).

The fundamental philosophy of phenomenological research has its origins in the early twentieth century work of Edmund Husserl (descriptive), and Martin Heidegger (interpretive) (Ashworth, 2003, Lopez and Willis, 2004). Phenomenology was developed as a countermovement to the positivist paradigm, which assumed that reality was ordered and that knowledge was objective and measurable independent of human interaction. Aligned closely with the naturalistic paradigm, phenomenology presumed that reality was indeed not predetermined, but rather it was founded on individual and subjective realities (Reiners, 2012). Hence, phenomenological research was considered to be intuitive and dynamic. Furthermore, phenomenologists embraced the interaction between researcher and participant in striving for new knowledge, and consequently gained new understanding regarding phenomena not typically studied (Polit and Beck, 2005).

The fundamentals of phenomenology align well with the objectives of this study, and the overall aim to explain how trust influences the conduct of construction management practitioners in construction projects. Ultimately, phenomenology maintains that any attempt to understand social reality must be predicated via people’s experiences of that reality (Gray, 2014). Consequently, this research aims to create new meaning regarding the influence of trust, and through the subjective experiences of knowledgeable practitioners, apply an inductive approach that enlightens key themes central to the reality of trust, as it is experienced.

All phenomenology is descriptive in terms of an attempt to describe, rather than explain, however philosophical differences exist between descriptive and interpretive phenomenological approaches (Finlay, 2009). Descriptive phenomenology seeks to analyse the descriptions provided by participants, and organise them into consequential statements that inform the essential meanings that constitute the phenomenon under investigation. The result is a written description concerning the structure of the phenomenon (Penner and McClement, 2008). A descriptive phenomenological approach is utilised when little is understood about a subject, and the aim is to cast light on and understand the most important factors pertaining to the phenomenon of interest from the perspectives of those with direct experience of it (Giorgi, 1997).
In contrast, the interpretive method utilises the researcher’s prior understanding and insights to decipher and reveal concealed meanings with the aim of constructing a clear documented representation of the phenomenon described (Kleiman, 2004). To this end, interpretive structures are used to examine the correlations and meanings that understanding and context have with each other (Penner and McClement, 2008).

In order to ensure unambiguous and robust research outcomes, and also to remain true to the ontological and epistemological views previously stated, the divergent philosophical foundations of phenomenology need to be clearly understood, and must drive subsequent methodological decisions (Lopez and Willis, 2004, Stubblefield and Murray, 2002, Creswell, 2007). To this end, the descriptive and interpretive philosophies of phenomenology have been considered, in order to provide justification for the interpretive approach subsequently adopted.

3.6.1.1 Descriptive phenomenology

The descriptive phenomenological approach to inquiry was developed by Husserl based on his philosophical ideas about how science should be undertaken (Cohen, 1987), and the value he placed on experience as perceived by human consciousness (Lopez and Willis, 2004). Figure 3.5 summarises the key features of the descriptive phenomenological approach.

Figure 3.5 Features of descriptive phenomenology (Maggs-Rapport, 2001)
According to Husserl, consciousness is implicit and unavoidable in any experience, and its presence is felt whether it is acknowledged or not (Husserl, 1917). Husserl believed that subjective information was important in terms of human motivation, as human behaviour is influenced by what people perceive to be real (Lopez and Willis, 2004).

In examining the human consciousness that gives meaning to an individual’s experience (Creswell, 1994), Husserl used descriptive phenomenology to describe everyday conscious experiences, with the fundamental caveat that suppositions are suspended. That is, all preconceived beliefs are set aside or bracketed (Dahlberg et al., 2008) when listening to and reflecting on the lived experiences of research participants (Drew, 1999). Bracketing is essentially a process by which “one simply refrains from positing altogether; one looks at the data with the attitude of relative openness” (Giorgi, 1994, p. 212). This bracketing approach is essential to descriptive phenomenology (Lopez and Willis, 2004). The researcher must deliberately strip his or her consciousness of all previous understanding and personal biases (Natanson, 1973, Ashworth, 1996), in order to accurately comprehend the essential lived experiences of research participants. In this regard, Husserl aimed for what he termed transcendental subjectivity (Lopez and Willis, 2004), whereby the influence of the researcher is constantly assessed and bracketing techniques employed to ensure they do not influence the object of study (Kocklemans, 1994). Ultimately, fundamentals of descriptive phenomenology endeavour to ensure results are presented exactly as they are intuited (Giorgi, 1997).

Another underlying philosophy of descriptive phenomenology is the belief that “universal essences” exist within any lived experience which are common to all persons who have that experience (Natanson, 1973). Descriptive phenomenology seeks to identify commonalities in the experiences of research participants, in order that a generalized description is possible, (Lopez and Willis, 2004) resulting in one correct interpretation and a foundationalist method of inquiry (Allen, 1995). Reality in this regard is considered to be objective and detached from history and context (Lopez and Willis, 2004). To this end, Husserl expressed the idea of “radical autonomy” (Husserl, 1970), whereby any influence on one’s environment or culture is directly within the control of the respective individual (Cohen and Omery, 1994). Hence, any converse impact of external environmental or context-specific factors on an individual’s freedom to choose are not central to the fundamental philosophies of descriptive phenomenology as articulated by Husserl (Lopez and Willis, 2004).
Within the context of this study, the descriptive phenomenological approach is deemed to be inappropriate for a number of reasons. As previously stated, the theoretical perspective of interpretivism has been indicated in order to remain true to the ontological and epistemological positions underpinning this research. This interpretivist approach is at odds with the fundamentals of descriptive phenomenology. Reality within an interpretivist approach exists in the interchange between the subjective view and the objective external world (Gray, 2014, Barone, 1992, Guba, 1990). Furthermore, understanding in response to social inquiry ultimately emerges via analysis and subsequent classification within the mind (Williams and May, 1996). In adopting an interpretivist approach, the suspension of all previously held suppositions is therefore not desirable (Finlay, 2009), as the researcher cannot be categorically removed from the phenomenon under examination (Smith, 1989). Additionally, there is a widespread view that effective bracketing is problematic, if not impossible anyway (Finlay, 2009). Consequently, while a critical self awareness on the part of the researcher in terms of their own subjectivity remains essential (Finlay, 2008), pre-existing beliefs and knowledge should not be ignored, but rather should be embraced and used to guide the examination of the chosen topic in light of new evidence (Halling et al., 2006). The origins of this research are founded on the experience and knowledge of the researcher, along with dimensions of trust as identified from existing literature via the developed trust framework. Any attempt at bracketing would subsequently be detrimental to the value of the research in terms of delivering meaningful and comprehensive outcomes regarding the social reality of trust and its influence.

Other underlying principles of descriptive phenomenology are also significant in terms of research founded on an interpretivist philosophy. The search for universal essences (Natanson, 1973), a generalized description (Lopez and Willis, 2004) and one correct interpretation of lived experience (Allen, 1995) are all incompatible with the fundamentals of an interpretivist approach. The interpretivist philosophy accepts that all social research is influenced by a degree of interpretation (Smith, 1989), and rejects the pursuit of universally applicable outcomes (Schutt, 2006) which purport to present an exclusive representation of any one reality (Guba and Lincoln, 1989). The interpretivist view also recognises that the convoluted reality of the social world cannot be restrained by a set of discernable principles. Hence, outcomes which can be broadly applied are considered of lesser consequence than outcomes which provide a profound level of understanding of the real circumstances forming any reality (Gray, 2014).
The idea that reality regarding lived experience is objective and detached from any historical or situational influence (Lopez and Willis, 2004) is also inconsistent with the constructionist philosophy which underpins an interpretivist approach. Contextual specifics (e.g. alternate procurement mechanisms) regarding the influence of trust cannot be ignored. To this end, understanding emerges from our interactions (Opfer, 2008), and truth and its elucidation do not exist in an unrelated world, but conversely are formed as a result of interactions with the external world (Gray, 2014). The descriptive phenomenological approach is therefore clearly not suitable.

### 3.6.1.2 Interpretive phenomenology

The interpretive phenomenological approach to inquiry was developed by Heidegger, who questioned Husserl’s description of our association with objects and ideas (Maggs-Rapport, 2001), and held his own views in terms of how phenomenology could guide meaningful enquiry. These views were founded on the interpretive or hermeneutic research tradition (Cohen, 1987), which aims to expose and enlighten what is typically concealed within human experiences and interactions (Spiegelberg, 1976). Hermeneutics endeavours to delve deeper than simple descriptions of primary concepts and essences, and searches for understanding which is ingrained within common life practices (Lopez and Willis, 2004). Ultimately, hermeneutic inquiry centres on what people experience, rather than on what they knowingly understand (Solomon, 1987). Figure 3.6 summarises the key features of the interpretive phenomenological approach.

**Features of interpretive phenomenology**

- Understand our world via our existence within it
- Comprehend and interpret phenomena
- Exist 'in the world', and be influenced by all that is going on around us
- Understand our existence in the world through verbal communication and written expression
- Incorporate personal preconceptions and understanding into the hermeneutic approach
Heidegger (1962, p.37) believed that “the meaning of phenomenological description as a method lies in interpretation”. In this regard, interpretation is not an additional procedure, but rather it is an inevitable and integral part of our existence (Finlay, 2009). Heidegger termed this state “being-in-the-world”, whereby the manner in which people relate to things is a fundamental element of external reality (Maggs-Rapport, 2001). As all humans exist within, amongst and indivisible from a world of being, it is not possible to remove oneself from the world in which one lives and interacts (Lopez and Willis, 2004, Maggs-Rapport, 2001). The experienced reality of any individual is therefore invariably influenced in this regard (Lopez and Willis, 2004). Humans understand their world via their existence within it (Heidegger, 1927/1962), and relationships and interactions between individuals are at all times influenced by contextual factors in the world around them (Maggs-Rapport, 2001, Dreyfus, 1987). Consequently, it is the interpretation of the narratives provided by research participants with consideration to context that is foundational to interpretive phenomenology (Lopez and Willis, 2004).

In essence, it is not the pure content of human subjectivity that is important in the search for new meaning via hermeneutic inquiry. Rather, new meaning is discovered through what is implicit in the narratives of individuals regarding their experiences day to day (Lopez and Willis, 2004). To this end, the interpretive enquiry approach looks to understand how factors specific to the life world of research participants contributes to commonalities and differences between their individual experiences and the choices they make (Heidegger, 1927/1962, Lopez and Willis, 2004). The concept of situated freedom (Leonard, 1999) is paramount in this regard, as although any individual is free to make individual choices, such choices are not absolute, and are inherently constrained by the specific circumstances of their respective lives (Lopez and Willis, 2004). Ultimately, situated freedom is considered to be the empirical reality from which all understanding emerges (Satre, 1993).

Of significance also within the interpretive phenomenological approach is the underlying philosophical assumption that prior understanding or presupposition on the part of the researcher is of considerable value (Dahlberg et al., 2008, Lopez and Willis, 2004). To this end, such knowledge or presumptions provide the origin for the research in the first instance (Koch, 1995), while also subsequently guiding the research approach and facilitating meaningful outcomes (Lopez and Willis, 2004). Fundamentally, researcher knowledge is not only helpful (Halling et al., 2006), but it is also necessary to interpretive phenomenology (Geanellos, 2000). In this
regard, it is not possible for the researcher to explicitly repudiate their own experiences or understanding of the phenomenon under study (Heidegger, 1927/1962, Smith, 1989). Consequently, individual awareness is paramount within interpretive phenomenological research (Reiners, 2012). The technique of bracketing as described in descriptive phenomenology is therefore not complementary to a hermeneutic approach (Annells, 1996, LeVasseur, 2003). That said, any preconceptions or prior knowledge must be clearly articulated, with subsequent application clearly explained (Lopez and Willis, 2004).

Within the context of this study, the interpretive phenomenological approach founded on the fundamental principles of hermeneutics is considered to be highly appropriate, and aligns well with the theoretical perspective of interpretivism, and the ontological and epistemological positions underpinning this research. This approach will allow the influence of trust ingrained within the common life practices of skilled and knowledgeable stakeholders to be uncovered (Lopez and Willis, 2004). Through an examination of what people experience (Solomon, 1987), and by moving beyond mere description of trust and its influence (Lopez and Willis, 2004), a deep level of understanding that would otherwise be concealed will be achieved (Spiegelberg, 1976). As all humans exist inherently within their respective worlds (Lopez and Willis, 2004, Maggs-Rapport, 2001), contextual specifics will invariably be significant in terms of how trust is experienced (Maggs-Rapport, 2001, Dreyfus, 1987). To this end, the interpretation of the narratives provided by research participants with consideration of context will be fundamental to the research outcomes when utilising the interpretive phenomenological approach (Lopez and Willis, 2004). Ultimately, the interpretive phenomenological approach will aim to bring new meaning to the influence of trust, through examination of what is implied in the accounts of research participants as experienced day to day (Lopez and Willis, 2004). Specific factors which contribute to commonalities and differences between individual experiences and choices will be investigated (Heidegger, 1927/1962, Lopez and Willis, 2004), with the concept of situated freedom (Leonard, 1999) relevant in terms of understanding the empirical reality of trust and its influence (Satre, 1993).

In adopting the interpretive phenomenological approach, prior understanding and experience on the part of the researcher is considered to be of significant value (Dahlberg et al., 2008, Lopez and Willis, 2004), not only in terms of the original research problem (Koch, 1995), but also on subsequent methodological design and application in the pursuit of meaningful outcomes (Lopez and Willis, 2004). To this end, experience within a construction management context has
identified the potential importance of trust in the management of any construction endeavour. In aiming to shed light on the influence of trust, knowledge and understanding pertaining to trust and its dimensions (i.e. the developed trust framework) are important in terms of developing and applying an appropriate research methodology. Similarly, the interpretive process fundamental to the chosen research approach is also enhanced via an existing level of understanding on the part of the researcher. Hence, the interpretive phenomenological approach is entirely appropriate, and the subsequent research methodology and methods will be developed accordingly.

3.6.2 Interview-based phenomenological investigation

The proposed interview-based phenomenological investigation will respond to the stated research objectives. Both confirmatory and exploratory coding approaches founded on the developed trust framework will guide the phenomenological thematic analysis of lived experiences. As previously established, in order to enlighten understanding regarding the phenomenon of trust as it applies to project management processes within a construction management context, meaningful investigation must be founded on the perspectives of those individuals who experience it (Cohen and Daniels, 2001). To this end, collection of data via interview is complementary to the qualitative approach, and will facilitate the examination of individual perceptions and experiences regarding the phenomenon of trust. A qualitative interview will provide the mechanism for gaining deep insights into how people experience and interpret the social world in which they live (Mack et al., 2005). A clear picture of the participant’s views on the research area (Zami and Lee, 2009) will subsequently be obtained via an inductive thematic process, with the developed framework of trust themes and coding conventions constructed from literature central in this regard.

As with all qualitative research approaches, the potential for researcher bias is ever present, and therefore must be considered when developing and implementing an interview-based phenomenological investigation. The interviewer must be conscious of the potential failings of the interview approach, and preconceptions on the part of both the interviewer and interviewee must be appropriately considered and managed (Leonard, 2003).

3.6.2.1 Interview theory

An interview is essentially a “purposeful discussion between two or more people” (Kahn and Cannell, 1957, p. 149). The definition provided by Kvale (1996, p. 14) further explains the fundamentals of this approach.
“The qualitative research interview is a construction site for knowledge. An interview is literally an inter view, an inter-change of views between two persons conversing about a theme of mutual interest”.

The semi-structured in-depth interview is widely utilised in qualitative research as a form of data collection. By talking to people and listening to their respective point of views (Burgess, 1982), the expressive power of language enlightens understanding regarding real world experiences, explanations and descriptions (Hammersley and Atkinson, 1995, Legard et al., 2003). Via purposeful conversation (Loftland and Loftland, 1995, Webb and Webb, 1932), the interview process fundamentally illuminates knowledge regarding how the social world is constructed in everyday human relations (Rorty, 1980). Divergent philosophical positions exist regarding knowledge that is forthcoming from interview-based qualitative research. Knowledge in this regard is either constructed in the interview, or alternatively it is considered to be a given, waiting to be uncovered by the Researcher. For the purpose of this study, the constructivist position has been adopted, and remains in line with the overall objective of investigating trust as a phenomenon (Kvale, 1996).

In investigating the influence of trust on the practice of project management within construction projects, the experiences of the research participants as recorded via in-depth interview provided the data for analysis. As these experiences are essentially personal insights regarding past events, caution must be used when relying on such perceptions as a source of data within any research endeavour (Johnson, 1994). To this end, the subsequent design and application of the interview study was conducted accordingly, based on Johnson’s generalised theories in this regard.

1. The process of perception in any individual is comprised of multiple stages (Johnson, 1994).
2. The perspectives and behaviours of any individual are inevitably moulded in some way by perceptions, rather than any objective reality. This is of fundamental significance within the framework of this study, and the constructionist position adopted. Trust does not exist in an objective and absolute reality. Rather, the reality of trust exists within the consciousness of stakeholders, and is influenced by the interactions between them and the external world (Coleman, 1988, Grix, 2002, Maloney et al., 2000). Hence, the adopted interview methodology must allow the interviewees to freely express their respective
experiences and viewpoints of trust. To this end, any direction on the part of the researcher should be kept to a minimum, other than as required to generate suitable discussion (Johnson, 1994).

3. Perceptions are not definitive, and are merely an approximation of reality as it is experienced. While perceptions of trust are invariably individualistic, these perceptions are nonetheless valuable in terms of understanding the influence of trust on the practice of project management within construction projects (Johnson, 1994).

4. In some instances, individuals may be unable to articulate some perceptions. In this regard in terms of trust, individuals may hold views towards certain issues or other stakeholders that they cannot explain. Hence, explanations may be incomplete, and justifications imperfect (Johnson, 1994).

5. Perceptions are likely to be internally consistent. That is, despite inherent inconsistencies that invariably influence the perceptions of any individual, such perceptions are developed based on situations and phenomena that from their own perspective would be justified, valid and reliable (Johnson, 1994).

6. Personality characteristics, social and cultural experiences, and other contextually specific factors are likely to substantially influence an individual’s perceptions. This point is also fundamental within the context of this study. Given the human, technical and socio-technical dimensions of project management within a construction environment, individual perceptions of trust will logically be influenced in this regard. However, rather than being detrimental to the outcomes of this study, the influences on an individual's perceptions of trust are considered of value in terms of understanding trust within the practice of project management in construction projects (Johnson, 1994).

7. Perceptions are likely to be influenced by recent experiences, and it is somewhat inevitable that current and recent projects dominate an individual’s perceptions in this regard. However, in terms of gaining an understanding of trust, this is not considered to be in any way detrimental to the outcomes of this study (Johnson, 1994).
3.6.2.2 Face to face interview principles

The adopted qualitative interview methodology ultimately aims to provide a data source for analysis that is founded on the lived experiences of construction practitioners with regards to the influence of trust. This qualitative approach gives consideration to individual people, situated in context, and subjected to detailed inquiry regarding their experiences (Miles and Huberman, 1994). Furthermore, the in-depth interview approach allows trust and its dimensions to be explored and examined within the specific setting of a normal construction project environment, with pertinent themes, both implicit and explicit, subsequently revealed (Rubin and Rubin, 2011). Via the communicative language embraced within the adopted semi-structured interview, research participants are afforded the capacity to present descriptions, rationalisations, and evaluations regarding the influence of trust, as perceived within their respective worlds (Legard et al., 2003).

Given that the collected interview data is fundamental to the eventual outcomes of this study, the ability to conduct successful interviews with the respective Interviewees is paramount. To this end, a standardised approach is considered to be vital in terms of ensuring the reliability of the interview data which is collected (Cicourel, 1964). Hence, attributes of a successful interview as described by Daniels (2001), and Legard et al. (2003) have provided the tenets upon which the face to face interviews for this study were undertaken, as outlined below.

1. Structure and flexibility: A pre-defined interview schedule is utilised, however it is applied with a degree of flexibility. Topics can be covered in an order suitable to the Interviewee, allowing responses to be fully examined and explored. The Researcher is also granted a degree of spontaneity, and is able to be responsive to relevant issues raised (Legard et al., 2003). That is, the Interviewee must be adaptive to the circumstances of the interview. By avoiding a strict adherence to script and sequencing, the fullest descriptions possible can be elicited (Daniels, 2001).

2. Interactive in nature: The interview data is generated via an interaction between Researcher and Interviewee, i.e. a two-way conversation. Initial questions are asked in a manner that encourages the Interviewee to answer freely and openly. Subsequent intervention on the part of the Researcher is determined according to the answer provided (Legard et al., 2003). The Researcher must be proactive in the interaction process. By adopting an intuitive approach, a facilitative
environment must be created in which Interviewees feel comfortable disclosing their personal and objective experiences of the phenomenon under examination (Daniels, 2001).

3. Researcher probing: To mitigate mere surface-level responses, the Researcher must probe for in-depth answers in terms of exploration, explanation and comprehension. By way of appropriate follow up questions, the Researcher is able to gain a more complete understanding of meaning in terms of mitigating factors at the core of the answers given (Legard et al., 2003).

4. Generative of new knowledge: The interview process will inevitably result in the generation of new ideas and knowledge. Driven by the questions asked, the Interviewees will ultimately explore ideas from a new perspective, as directed by either themselves or the Researcher (Legard et al., 2003).

5. Accurate transcription of interview: Given the desire to extract meaning from the answers provided, it is vital that the interview data is transcribed in its true and natural form, inclusive of the profundity, subtleties and individual language contained within the respective Interviewee responses. Hence, interviews should be accurately recorded and transcribed, without any input or interpretation from the researcher (Legard et al., 2003).

6. Face to face: Considering the intense and deep level of exchange that is inherent within an in-depth interview, a physical encounter between Researcher and Interviewee is essential in order to explore meaning and language, and conduct an interview which is generative, interactive and adaptable. Hence, a face-to-face approach is essential (Legard et al., 2003).

7. Inclusive and reflective: In order to aid understanding and enhance reliability, validation by the Interviewee should be routinely sought by the Researcher by way of regular pauses and analytical reflection out loud (Daniels, 2001).

3.6.3 Application of methodology

In applying the developed methodology, the following provides details regarding the process by which the interview data was collected.
3.6.3.1 Type of interview
The different forms of interview identified by the literature include structured, semi-structured and unstructured (Saunders et al., 2003, Zami and Lee, 2009). The structured interview follows a pre-defined and standardised form, while the unstructured interview is informal in nature and follows no pre-determined list of questions. The semi-structured interview is also non-standardised, although the researcher will have predetermined a list of questions and themes which are to be covered, with a degree of flexibility inherent in this approach (Zami and Lee, 2009). In considering the type of interview to be adopted, it is important to understand the need to not only ask the right questions, but also set aside prior assumptions regarding what the correct response might be (Cohen and Daniels, 2001). For the purpose of this study, an in-depth semi-structured interview method is considered to be appropriate (Daniels, 2001). The open-ended and discovery-focused characteristics of an in-depth approach will allow the feelings and viewpoints of the interview respondent to be examined (Guion et al., 2006), with intensive individual interviews ultimately informing perspectives pertaining to trust and its influence (Boyce and Neale, 2006). The definition provided by Mack, et al. (2005, p. 132) describes the in-depth interview approach and how it should be implemented, while also providing further justification for its use within the current study. Mack et al. describe the approach as:

“A qualitative research method in which a researcher/interviewer gathers data about an individual’s perspectives on a specific topic(s) through a semi-structured exchange with the individual. The researcher/interviewer engages with the individual by posing questions in a neutral manner, listening attentively to responses, and asking follow-up questions and probes based on those responses”.

3.6.3.2 Defined unit of analysis
The defined unit of analysis is a key consideration in terms of designing and implementing the proposed interview-based phenomenological investigation. In this regard, interview participants operating within particular dyadic or project team relationships were considered, however, given the nature of trust and its dimensions, and the varying influence of human, technical and socio-technical dimensions, individual project participants across various projects are considered to be the most appropriate. While trust is a psychological state based on an individual’s willingness to accept vulnerability at the hand of another individual party, to limit the unit of analysis to a dyadic relationship, or even a number of dyadic relationships would be problematic, given the varied dimensions of trust and the subsequent contextual influences that warrant investigation.
For example, an analysis of data sourced from dyadic parties operating with no prior relationship, in a high risk, contractually difficult environment, would likely yield different results than an analysis of data sourced from dyadic parties operating with a long-standing relationship, in a low risk, contractually relaxed environment. Data sourced from particular project teams, via a case study approach, would also be similarly prejudiced. To discount the dyadic or project team approach in terms of the unit of analysis is not an acknowledgement that these potentially problematic influencing factors are unimportant. Rather, these factors are in fact significantly important. Hence by adopting a unit of analysis comprising individual project participants across a wide range of projects, comprehensive data founded on wide-reaching real world experiences will be obtained, with subsequent analysis revealing a deep level of understanding pertaining to trust as it is experienced.

3.6.3.3 Selection of research participants
Selection of the research participants is logically significant in terms of the proposed interview-based phenomenological investigation. Within any phenomenological investigation, the only legitimate source of data lies in the experiences and viewpoints of the participants themselves. Participants are therefore purposive. They must be determined from the outset, and selected only if they have lived the experience central to the study (Goulding, 2005). Within the context of this study, interview participants were selected with this in mind. A total of thirty-five interviewees provided the data for analysis, with selection and recruitment essentially determined by pragmatism. Participants were all conveniently located, and suitably practised with a minimum of five years’ experience in their respective roles. A variety of individual stakeholders from different sectors, and fulfilling different roles, were selected. These included clients, client representatives, project managers, contractors, sub-contractors, consultants, engineers, architects and quantity surveyors. Experience of both transactional and relational forms of procurement was a key factor in the selection process. Contextual specifics in this regard were considered fundamental in terms of responding to the defined research objectives. To this end, the distinction between transactional and relational procurement experience was determined amongst the respective interviewees, with the subsequent interview data utilised accordingly.

3.6.3.4 Ethics
As the proposed qualitative interview study is reliant on the personal experiences of the respective research participants, the issue of ethics must at all times remain central to the interview process (Brinkmann, 2008). In general terms, ethics can be described as doing what is
morally right, dealing with people fairly, and not hurting anyone (Lichtman, 2014). As is mandatory for all research undertaken at the University of Newcastle that involves human participants, the proposed interview protocols informing this study were submitted to, and subsequently approved by the Human Research Ethics Committee (Refer Appendix 4). The ethics approval process ultimately ensured the research was undertaken in a manner in which all stakeholders (including interview participants and researchers) were free from harm as a result of their involvement with the research undertaking.

3.6.3.5 Interview preamble
Prior to commencement of the interview, a preamble was delivered which outlined the underlying purpose of the interview, the format of the interview, and the expected duration. The terms of the human research ethics committee clearance to which the participant had previously agreed were also reiterated. Finally, consent to allow the interview to be recorded and transcribed was sought, with an offer for review of the final transcript also made.

3.6.3.6 Interview conduct
The interviews were conducted in alignment with the interview principles previously discussed. While an open and flexible approach (Saunders et al., 2003) with genuine interplay between parties is inherent in the chosen in-depth semi-structured interview process, the prompting and probing techniques engaged in by the interviewer must be accomplished in a manner which does not influence the given responses, or the recording of the subsequent interview data. Hence, a friendly and conversational atmosphere was provided, in order that the Interviewee would at all times feel comfortable to openly and unreservedly articulate their personal views and experiences. Reactive emotional responses on the part of the Researcher were avoided. It was considered important that the participant remained unaware if they provided a response that was of particular significance to the study, so that consequent confirmatory behaviour was prevented. Note taking on the part of the Researcher was deliberately restrained for this reason also. With that said, positive body language, and supportive reinforcement through gesticulations and phrases were adopted in order to encourage responses. Time management was also paramount, and to this end, the Interviewer retained control of the interview, to ensure it remained productive and on topic (Legard et al., 2003).

In conducting the interviews, the range of tasks proposed by Mason (2002) for effective interviewing remained front of mind.
1. Comprehension: Listen and understand what is being said.
2. Assess relevance: Identify applicability to research questions.
3. Identify contradictions: Remain perceptive to any contradictions with earlier answers.
4. Follow up: Give consideration to issues requiring further detailed exploration, and whether to follow up immediately, or come back to it later.
5. Phrasing of questions: Decide the manner in which the next question is to be phrased.
6. Perceptiveness: Remain perceptive to identifying nuances, sentiment, indecision, and non-verbal gestures.
7. Interview timing: Maintain appropriate timing throughout the interview.
8. Manage peripherals: Monitor recording equipment, and manage any disruptions or distractions that occur.

It should be noted that the process of analysis was deliberately omitted. The focus at all times remained on the interview process itself, rather than on any form of analytical construct (Legard et al., 2003).

3.6.3.7 Interview questions and deployment

In contemplating the development of appropriate interview questions, Patten’s (2002) classification criteria of context, knowledge, behaviours, and opinions were utilised.

1. Context: Scene-setting and background, providing context for the data.
2. Knowledge: Factual information regarding a particular subject matter.
3. Behaviours: An individual’s experiences and actions regarding a particular subject matter.
4. Opinions: An individual’s values and views regarding a particular subject matter.

With the aim being to gain wide-ranging coverage across key issues, as well as in-depth coverage within each (Kvale, 1996, Rubin and Rubin, 1995), the principles of content mapping and content mining were also embraced. Content mapping questions allowed issues relevant to the Interviewee to be identified. While content mining questions allowed the detail of each dimension to be explored, with a deep level of understanding from the participant’s perspective subsequently revealed (Legard et al., 2003).
Pre-determined interview questions provided the general structure for each interview. Broad-based, open questions were utilised in order to encourage a full and deep level response. While, narrow, closed questions were used when a high degree of specificity was called for. Closed questions were also beneficial in terms of controlling the interview process, managing rambling, and ensuring the discussion remained on track (Legard et al., 2003).

Questions firstly set out to establish the role of the respective participant, before focusing on attitudes towards stakeholder relationships, culture, procurement mechanisms, and other germane factors regarding trust and its influence. In adopting the semi-structured approach, a degree of flexibility remained, and probing on the part of the Interviewer was critical. To this end, responsive follow-up questions facilitated insightful discussion, and educed additional description, explanation and knowledge. While the probes were mostly of a verbal nature, non-verbal probes were also effectively employed (i.e. appropriately timed pauses throughout the interview, personal gestures, etc. (Legard et al., 2003)).

Leading questions were avoided in order that, while a deep-level response was elicited, the questions did not influence the respective response. Questions were also carefully structured and phrased, in a neutral tone without evocative or judgemental wording (Morse and Richards, 2002).

Everyday language was used in order to ensure the questions were not too abstract or theorised, and the questions asked were ultimately framed around issues that directly related to the respective views, circumstances and experiences of the research participants. By adopting this approach, a rich data source was generated regarding real world, lived experiences of trust and its influence (Kvale, 1996).

3.6.3.8 Interview execution

The location of the interview was essentially determined by the Interviewee, in order to ensure minimal inconvenience. A quiet room was utilised where possible. As per the previously obtained signed consent form, the interview protocol mandated that the interview be recorded.

The length of the interviews was not strictly pre-determined, and each interview was allowed to reach a natural and uncontrived conclusion. This resulted in interviews ranging in length from 30 minutes to 80 minutes. At the conclusion of each interview, participants were advised that they would receive a copy of the transcript for review, at which time they would be free to remove
any sensitive or incorrect information. None of the participants requested any changes in this regard.

3.6.3.9 Semi-structured interview script
Inherent in the semi-structured interview approach is the acknowledgement that a deep level of understanding is gained when the interviewee is provided with the freedom to raise and discuss any pertinent issues based on their own perspective and experience. Hence, the interview was conducted in a manner that was free from a strictly rigid interview script. Pre-defined questions were used as a general guide to facilitate the discussion, however the interviewer maintained a flexible approach, and embraced the fundamental in-depth interview principles discussed previously. Note-taking and annotations on the interview script were utilised as required, however this was kept to a minimum. A copy of the semi-structured interview script that was utilised is included in Appendix 5.

3.6.3.10 Post-interview procedures
A review of any field notes and/or annotations would be made as soon as practical on completion of the interview. Observations would be made as appropriate, and any omissions or gaps were rectified. The interview recording would than be reviewed in conjunction with the field notes to ensure accuracy.

Preconceived ideas on the part of the interviewee can also be significant in terms of the answers given. In this regard, the researcher must be reflective in assessing the interview interaction, and any influencing factors identified must be appropriately considered when recording research outcomes (Leonard, 2003).

Accordingly, the recorded interview data from the semi-structured interviews was professionally transcribed.

3.6.4 Data analysis
3.6.4.1 Coding principles
As outlined previously, with reference to the developed trust framework, the coding process applied to the interview data utilised both confirmatory and exploratory coding approaches. The coding process itself and its subsequent application to the interview data, is fundamental to the research outcomes. To this end, the quality of the research is entirely contingent on the accuracy of transcripts and field notes, along with the defined coding categories and the precision with
which they are applied to the data source. While some code hits will be explicit and unambiguous (Richards and Richards, 1995), other code hits will be more demanding, given that they are derived from descriptions and interpretations extracted from the data by the researcher (Miles and Weitzman, 1994). In any qualitative research endeavour, this potential problem is inherent.

Within the context of the current study, the research objectives must be the driver for applying effective and appropriate coding procedures. The developed trust framework is integral in this regard, with open codes utilised to reveal themes, and axial coding used to develop individual detail (Strauss and Corbin, 1990). The coding process ultimately aims to extract understanding from the interview data regarding the influence of trust on the practice of project management within construction projects. Embracing a thematic analysis process, coding aims to “encode qualitative information” (Boyatzis, 1998, p. vii). The interview data is reviewed and analysed in order that “codes”, words and/or phrases can be used to label sections of data, with reference to the prior knowledge of trust embodied in the developed trust framework (Boyatzis, 1998).

Coded themes that are forthcoming from the thematic analysis process present a summation of ideas as extracted from the data by the researcher.

With reference to the foregoing, the following coding principles were fundamental within the context of this study.

1. Utilise both confirmatory and exploratory approaches.
2. Utilise open coding to identify themes, and axial coding to develop detail (Strauss and Corbin, 1990).
3. Undertake multiple passes of the data (Rice and Ezzy, 1999).
4. Utilise memo writing in order to formalise the sense-making process (Morse and Richards, 2002).
5. Undertake coding of interviews individually, followed by a consolidation process by which coding hits are amalgamated into categories aligned with the main theme codes forming the developed trust framework.
6. Maintain an inquiring mindset and continually question outcomes, categories and definitions throughout the coding process (Ford et al., 2000).

A sample extract of the interview transcript coding outcomes is included in Appendix 6.
3.6.4.2 Multiple coders

Given that the coding process itself is intrinsically individualistic (Cohen et al., 1996, Klein et al., 2006) and fundamentally requires a degree of subjective interpretation and description on the part of the Researcher (Miles and Weitzman, 1994), mitigating measures in this regard need to be employed. An awareness of this potential problem is beneficial in designing and executing appropriate and effective protocols for data collection and analysis, in order to minimise or remove the effects of inherent short-comings within any qualitative research undertaking (Ford et al., 2000). To this end, self-awareness on the part of the Researcher is an effective measure in striving for objective and robust outcomes (Cohen and Daniels, 2001).

As per the methodological approach applied within the qualitative content analysis of PMBOK, triangulation and multiple coder principles are similarly applicable when undertaking the thematic review and coding of the interview data (Cohen et al., 1996, Harvey and MacDonald, 1993, Zami and Lee, 2009). By mandating the use of multiple coders, the effects of coder subjectivity can be reduced. Similarly, coding confirmation can be increased, and research credibility enhanced (Morse and Richards, 2002). Ultimately, the use of this triangulation technique will be fundamental to the legitimacy of the research outcomes (Zami and Lee, 2009).

The utilisation of multiple coders was integral to the application of the applied methodology. To this end, secondary coders were carefully selected based on an existing level of understanding and experience regarding the research methodology that was to be adopted. Education of the secondary coders was then undertaken in terms of the overall research endeavour and the developed methodological approach. This education ultimately ensured a high degree of consistency when applying the defined research protocols, adding to the rigour and integrity of the subsequent research outcomes (Morse and Richards, 2002, Zami and Lee, 2009).

3.6.4.3 Final research protocol

The following research protocol directed the research endeavour.

1. The interview recordings were professionally transcribed.
2. The interview transcripts were categorised according to procurement mechanism experience, i.e. transactional or relational procurement.
3. The interviews were individually subjected to the thematic analysis process, utilising both confirmatory and exploratory approaches, framed against the developed trust framework.
4. The first analytical pass of the data sorted it according to question.
5. Open coding was then utilised in order to reveal prevalent trust themes independently of the question’s subject.

6. Second and third analysis rounds were then undertaken in order to further explore these themes, and axial coding techniques were used to provide detail (where appropriate) to the open code themes.

7. Throughout the respective passes of the data, pertinent sections of text were highlighted, and comments added as required explaining the respective coding hit with reference to the open and axial codes contained within the developed trust framework.

8. Multiple coders were routinely and systematically utilised throughout the analysis process, in order to negate potential researcher bias, add methodological rigour, and ultimately to ensure robust and meaningful outcomes (Morse and Richards, 2002, Zami and Lee, 2009).

9. A consolidation process was then undertaken, and all the coding hits (including highlighted text and comments) from the respective interviews were merged together and categorised according to main theme codes, as well as procurement mechanism.

10. The deconstructed, thematically arranged analysis was then subjected to a process of synthesis whereby recurrent themes were constructed and explained by confirmatory reference to existing theory wherever possible, and signalling potential theoretical contributions where this was not possible.

11. A qualitative abstraction process was subsequently developed and implemented in order to compare the contextual specifics of transactional and relational procurement in terms of trust and its influence. To this end, the developed trust framework and the primary interview data were set aside (Dahlberg et al., 2008), and a pair-wise comparison was undertaken in order to examine the consolidated coding outcomes previously forthcoming from the thematic analysis of the interview transcripts. With categories assigned according to transactional and relational procurement, this process essentially analysed the codes arising from each of the main trust themes independently of the counterpart coding outcomes in the other procurement mechanism. The salient points relating to each particular trust concept were summarised, with further codes consequently derived, and thereafter identified within respective conceptual models relating to
them. Sample conceptual models in this regard are included in Appendix 7. By way of a pair-wise comparison of the respective conceptual models, the influence of trust within the contextual specifics of transactional and relational procurement was further examined, with pertinent issues highlighted. An example of the outcomes of this comparison process is included in Appendix 8. Ultimately, the pair-wise comparison directly identified the variances and similarities that exist between transactional and relational procurement in terms of trust and its influence.

3.6.4.4 Abstraction
The process of abstraction in which the researcher abstracts meaning via interaction with the data is fundamental to the emergence of new themes in any qualitative research endeavour (Morse and Richards, 2002). To this end, the thematic analysis of the interview transcripts is ultimately a means of knowledge management, whereby the defined research protocols are systematically applied in order to transform data into information, information into knowledge, and knowledge into understanding (Chenail, 2012, Davenport and Prusak, 1998).

The abstraction process is essentially founded on the developed trust framework, which in turn is founded on extant literature pertaining to trust and dimensions of trust. Hence, while the abstraction process inherently involves some degree of interpretation on the part of the researcher, subsequent results and conclusions are to a large degree self-evident, and suitably supported by accepted literature.

Within the context of this study and the desire to enlighten the essence of the phenomenon which is trust, the process of abstracting meaning from the interview transcripts is ultimately defined by the adopted research methods (Daniels, 2001). The concept of bracketing as discussed previously is significant in this regard. While the bracketing of any preconceived outcomes on the part of the researcher regarding what results the data will yield is indeed essential, in keeping with the identified interpretive phenomenological approach, the bracketing of prior understanding regarding trust and its dimensions is considered unwarranted (Lopez and Willis, 2004). To this end, the coding conventions forthcoming from the developed trust framework are integral to the abstraction of meaning pertaining to the lived experiences of construction practitioners, both in theory and in practice. The data itself still ultimately provides confirmation for the conclusions reached. However, a deeper level of understanding regarding trust and its influence is achieved as a result of the interpretive approach, rather than a pure reliance on the
explicit meanings contained within the data. Furthermore, in striving to gain understanding from the lived experiences of others, the interpretive approach also gives consideration to contextual specifics which may be of importance (Cohen and Daniels, 2001). That is, the applied research methods facilitate understanding from the perspective of the research participants, while also giving consideration to potential cultural and/or contextual influences (Cohen and Daniels, 2001).

The qualitative abstraction process upon which the pair wise comparison methods were founded is integral in this regard. In reviewing the consolidated coding outcomes anew, and with an attitude of openness (Giorgi, 1994), the potential for any undue influence on the data from the preconceived trust framework was subsequently negated (Kocklemans, 1994). Furthermore, with the constraints of the trust framework themes removed, analysis results were confirmed, and the potential for new understanding was subsequently enhanced.

Findings regarding the influence of trust on the practice of project management in construction projects will be presented in publications two, through to six.

3.7 Conclusion
This chapter has provided details of the methodological foundations upon which this research endeavour has been constructed.

Theoretical considerations pertaining to the overall methodological approach were firstly examined and clarified, with the ontological position of the researcher clearly articulated. The epistemological position was also considered and clarified, with the adopted theoretical perspective of interpretivism fully explained and justified. Precepts of the emic and etic approaches were also explained, with the overall research structure and methodological design delineated.

With the trust framework, central to the overall research endeavour, developed from the completed literature review, the qualitative content analysis methodology, and phenomenological interview study were subsequently considered and explained, with each step of the research process similarly identified. To this end, the theoretical principles underpinning each approach were examined, with justification provided for the methods developed and implemented.
4 RESULTS – ANALYSIS AND DISCUSSION

4.1 Introduction
Equipped with the trust framework forthcoming from the detailed literature review completed in
Chapter 2, this chapter provides the analysis and discussion resulting from the implementation of
the developed research methodologies outlined in Chapter 3. In remaining in line with the
publication approach of this thesis, the results of this research have been presented via a series of
individual, yet interconnected, published conference papers and journal articles. This chapter
includes the individual publications, as published.

4.2 Publication number one

4.2.1 Statement of authorship and contribution of others

Publication details
*Engineering, Engineering, Construction and Architectural Management*
0969-9988. DOI 10.1108/09699981211219616
The lead attests that whilst the candidate is the second named author on this paper, he was solely responsible for generating all of the intellectual content that it contains. The project was undertaken under the supervision of the lead author, and the authorship order would have been reversed had the candidate had sufficient time available to convert the work into a publication.

By way of clarification: the candidate developed the project concept and methodology, executed it to derive variously the concept model from literature, the content analysis (sample details of which are contained in appendix 2) and the findings reported in the paper. The lead author simply had the time available to convert this in a form suitable for publication.

It is worth mentioning that the paper was published in an A*ranked Journal, and won a special commendation from the editor (see appendix 9).

Graham Brewer.

Grant Webber, Assistant Dean Research Training, Faculty of Engineering and Built Environment.

4.2.2 Introduction
Publication number one is titled “Trust and the Project Management Body of Knowledge”, and was published in The Journal of Engineering, Construction and Architectural Management.

Publication details are as follows:

4.2.3 Exhibit One – Trust and the Project Management Body of Knowledge
TRUST AND THE PROJECT MANAGEMENT BODY OF KNOWLEDGE

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Abstract

Purpose – This paper aims to identify the extent to which dimensions of trust are reflected in the functional description of the role of a project manager as outlined in the Project Management Body of Knowledge (PMBOK).

Design/methodology/approach – The literature is used to identify trust dimensions that have the potential to impact on the conduct of a project. These are then assembled into a theoretical framework, which is then used to drive a thematic analysis of the project manager’s role as described in PMBOK. Similarities are confirmed, and absences identified and explained in the context of the literature.

Findings – The fourth edition of PMBOK is the first to make overt reference to the concept of trust. Detailed analysis of the text reveals that although certain trust dimensions are recognised they are dealt with in general terms, as desirable characteristics within the project environment rather than specific facilitators or actions in relation to the conduct of project.

Practical implications – PMBOK is the most widely recognised standard for the conduct of project management, and as such has achieved wide acceptance as defining the project manager’s role. It recognises trust as playing a part in the successful management of projects. However, fostering trust is central to the art of project management, and requires greater consideration than indicated by PMBOK.

Originality/value – This is the first critical analysis of PMBOK in relation to trust.

Keywords Trust, Project management, Project Management Body of Knowledge

Paper type Research paper

Introduction

Although the discipline of project management is a 20th century invention similar principles were recognisable in contemporary descriptions of the construction of the Pyramids and the Great Wall of China, and in the present project teamwork is evident across a broad range of industries (Lundin & Stablein, 2000). Identifying the skills required to manage work in such diverse contexts is clearly of importance.
It has been proposed that all aspects of the project management function are comprised of two dimensions, namely the technical and human (Cook-Davies and Arzymanow, 2003: p.472):

“The technical dimension encompasses those groups of practices or processes that are integral to project management, while the human dimension includes not only the people who are operating these processes, but their expertise”.

Trust is a fundamental requirement which initially facilitates human interaction (Romahn & Hartman, 1999, p. 233), and there is widespread agreement on the value placed on trust when studying human behaviour (Bigley & Pearce, 1998). The human interactions required in any organisation or project setting intrinsically require trust (Romahn & Hartman, 1999). Trust is therefore an important influence on project success, and failure to address it is likely to result in problems for the project manager.

It is apparent that the practice of project management is an amalgam of technical “science” and human “art” though this is not always reflected in the evolving literature pertaining to it. In this regard the PMBOK is widely regarded as representing contemporary best practice. It is nevertheless appropriate to recognise that this acceptance is not universal, with PMBOK receiving criticism for its linearity (e.g. Bourne & Walker, 2004), imposition of a mechanistic ‘one size fits all’ perspective of the project management process. (e.g.Morris, 2010; Gale & Brown, 2003; Zwikael & Bar-Yoseph, 2004).

Now in its fourth edition, A Guide to the Project Management Book of Knowledge (PMBOK) (PMI, 2008) is endorsed by the American National Standards Institute (ANSI) through it’s recognition of the Project Management Institute (PMI) as a Standards Development Organisation. This arguably makes PMBOK the globally pre-eminent project management standard. Significantly the latest edition of PMBOK is the first to make overt reference to issues associated with the concept of trust.

The mission statement underpinning the development of the standard aims to:

“Improve the understanding and practice of project management by identifying, defining, documenting and championing generally accepted project management practices and a common project management lexicon” (PMI, 2009). In light of this it is appropriate to evaluate the extent to which the PMI, through PMBOK consider trust to be worthy of championing.
The aim of this paper is to first develop a theoretical framework from literature with which to subsequently evaluate the PMBOK (Fourth Edition), with the intention of identifying how effectively it addresses key aspects of the human dimension of trust within the project manager's role.

Ultimately this study is justified as the human interactions required in any organisation or project setting intrinsically require an element of trust (Romahn & Hartman, 1999). Trust is important to the practice of project management and impacts on eventual project success. A failure to address the concept of trust is therefore likely to result in problems within the context of the project manager’s role. It can thus be seen that the impact of PMBOK upon the practice of project management is likely to be significant, both directly as a reference for project managers and indirectly through its shaping of educational curricula. These mechanisms may be better understood after detailed analysis provides a framework for subsequent investigations.

Key Concepts

For the purpose of this study a working definition of trust has been adopted:

“Trust is a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviour of another” (Rosseau, Sitkin, Burt and Camerer, 1998: p. 395).

It is important to note that the recognition of trust as a psychological state indicates that trust is not behaviour as such, and it is not the same as co-operation. A co-operative relationship does not automatically require trust, and compliance as a behaviour should not be misconstrued to imply the existence of trust. Co-operation may be contractual in nature, and may be induced through fear of sanctions or other coercive measures (Kadefors, 2004; Pinto, Slevin, & English, 2008).

Similarly, although there are many definitions of the project and the role of the project manager the PMI definition has been adopted for this study: “A project is a temporary endeavour undertaken to create a unique product, service, or result” (PMI, 2008: p.5). This is considered logical given that to adopt alternative definition would inevitably introduce conflict. Moreover, although the alternatives change the emphasis or extend the job scope, none have been shown to significantly alter the nature the research nor its outcomes. Thus it also logical to adopt the PMI's
definition of project management: “Project Management is the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements” (PMI, 2008: page 6).

The job role of the project manager is a more complex issue, which has a critical impact upon the achievement of project objectives and project success (Jiang, Klein, & Balloun, 1996; Jiang, Klein, & Margulis, 1998; Leigh & Maynard, 1995). The PMBOK describes this function as an understanding and application of the tools and techniques specific to project management, detailing this as the possession of project management knowledge, performance in application of this knowledge, and behavioural attitudes, personality characteristics, and leadership traits while performing the required tasks (PMI, 2008).

Zimmerer and Yashin (1998, p.36) elaborate further to include: leading by example; possessing vision, technical competence, decisiveness, and communication skills; standing up to top management when required; supporting project team members, and; encouraging innovation within the project team. In the context of the current study all of these characteristics are considered as belonging to the project manager's role.

Constructing the theoretical model
Any review of literature pertaining to trust reveals a plethora of different definitions, often developed in response to the exigencies of the particular disciplines within which they are to be deployed, resulting in debate and ambiguity (Hartman, 1999; Mayer, Davis, & Schoorman, 1995). Consequently there is no common definition of trust that can be confidently adopted by all disciplines (Romahn & Hartman, 1999), in part because the subjective nature of trust also limits the possibilities for developing a single trust model (Becerra, Denzinger, & Kremer, 2001).

This research examines the literature broadly, but with emphasis on the discipline of management. Definitions of trust are thematically coded and concepts created as a result. Multiple occurrences of concepts across several references have been taken as an indication of suitability for inclusion. As a consequence aspects of several trust models (e.g. Kramer, 1999; Lewis & Weigert, 1985; Luhmann, 1979; McAllister, 1995), have not found their way into the final theoretical framework. Table 1 provides an overview of trust classifications generated by previous research. It shows that while respective models have validity in the context of application (Romahn & Hartman, 1999), this review of the models finds no validity for general
application across disciplinary boundaries. However thematic review of these models has identified aspects of trust that have general applicability in the analysis of PMBOK.

Thematic analysis of the literature reveals that uncertainty, risk, expectation and vulnerability are elements of trust pertinent to a number of the trust models presented. Relational characteristics between the transacting parties also influence trust, and in this regard the temporary and unique characteristics of a project are important considerations, particularly control mechanisms and the competence level of the respective parties. In the context of this research human characteristics are highly represented, thus providing ample justification for conducting it. These are now explored in detail.

**Risk, vulnerability and uncertainty**

Risk, vulnerability and uncertainty are frequently cited in relation to trust, and can be considered interchangeable.

Risk is described as the perceived probability of loss (Chiles & McMackin, 1996), and risk must be present in any given situation in order for trust to arise (Deutsch, 1958; Becerra, Heard, Kremer and Denzinger, 2000). It is also important to note that potential gains resulting from accepting any risk will be forfeited if a party chooses not to trust (Romahn & Hartman, 1999). Within the context of the project setting, uncertainty and risk are inevitable, particularly considering the unique nature of any given project (Schwalbe, 2004). The requirement for the project manager to accept risk is unavoidable.

**Control mechanisms**

Control mechanisms are utilised in a project setting to control risk, mitigate uncertainty, and protect the vulnerability of stakeholders, providing penalties for non-performance. Their presence is claimed to instil a degree of confidence in the respective parties, and it is further claimed that this can activate trust (Wong, Cheung, Yiu and Pang, 2008). Conversely it has been found that excessive control mechanisms imposed on project managers from above that impose unwarranted conditions or reporting requirements may be indicative of client distrust, impinging on the project manager’s need to feel in control (Pinto et al., 2008). Likewise, excessive control mechanisms imposed by the project manager on other members of the project team may also be interpreted by them to be a signal of distrust, inhibiting trust based relationships within the project environment.
Cost affects control mechanism selection within the project setting since it will result in some cost to the project organisation. Trust-building is the key to reducing such costs. If trust is present within the relationship under which the control mechanism is functioning, then the need for control can be reduced, as the parties are able to operate without fear of exploitation (Aubert & Kelsey, 2000).
Table 1. Dimensions of trust.

<table>
<thead>
<tr>
<th>Author and year</th>
<th>Dimension of trust</th>
</tr>
</thead>
</table>
| Rotter 1967     | Focus on the trustor (the party placing trust in another party). Describe and define trust as:  
|                 | A character trait;  
|                 | A propensity to take risk;  
|                 | Expectations and beliefs, influenced by social background, experiences and cultural values. |
| Farris et al 1973 | Focus on the trustor (the party placing trust in another party). Describe and define trust as:  
| Mayer et al 1995 | Integrity;  
| Fukuyama 1995   | Honesty;  
|                 | Reliability;  
| Butler 1991     | Consistent behaviour  
| Gabarro 1978     | Competence;  
|                 | Fairness;  
|                 | Loyalty;  
|                 | Openness. |
| Barney and Hanson 1994 | Different levels of trust (weak, semi-strong and strong) for relationships with different levels of opportunity for opportunism, and different levels of vulnerability. |
| Shapiro, Sheppard and Cheraskin 1992 | Trust is differentiated based on the source of the trustor’s confidence.  
|                 | Deterrence-based trust (relies on punishment for non-conformance);  
|                 | Knowledge-based trust (relies on past experience);  
|                 | Identification-based trust (relies on mutual understanding and emotional |
Lewicki and Bunker 1996 | Trust differentiated with consideration to the parties involved.
Deterrence-based trust (parties can be trusted to keep their word in order to avoid penalties for violation);
Knowledge-based trust (familiarity of parties is such that their behaviour towards each other is predictable);
Identification-based trust) a common understanding is developed to the point where the parties can take action on behalf of one another).

Hartman 1999 | Integrity trust (belief that one party will guard the interests of another party);
Competence trust (belief that the other party is competent to perform the work assigned);
Intuitive trust (one party can trust the other party based on an emotional ‘gut feeling’).

Rousseau et al 1998 | Calculus based trust (motivated by self interest or financial incentive);
Relational trust (as a result of repeated, direct interactions, a comfort level is reached between the parties);
Institution-based trust (facilitated by legal institutions, and cultural and social norms).

**Relationships**

A relationship is described as the condition in which one party is reliant on another party to achieve its objectives (Sheppard & Sherman, 1998), and the presence of a relationship is an indispensable condition required for trust to develop (Deutsch, 1958; Rosseau et al., 1998). Past research identifies the advantages to project organisations when they exploit trust-based relationships (Pinto et al., 2008), and the success of any project is determined to a large degree by the trust which reinforces the relationships of the critical stakeholders (Pinto et al., 2008).
Within the project setting, the way in which trust improves project relationships is identified by Pinto et al. (2008, p.1):

“Trust is argued to enhance a variety of intra-organisational relationships, including project team dynamics, top management support and coordination across functional departments”.

Trust is therefore an important consideration when building relationships between critical project stakeholders (Karlsen, Graee, & Massaoud, 2008). This may develop from a base of low trust, to a base of high trust, in order to achieve well-functioning relationships (Karlsen et al., 2008). The temporary and unique nature of a project necessitates this as parties may not have past relationships or experiences on which to base trust (Atkinson, Crawford, & Ward, 2006). Furthermore, uncertainties resulting from the unique nature of a project environment add to the challenge of establishing well-functioning team work and coordination in project relationships (Karlsen et al., 2008), and reduce the potential benefits that could be realised through improved relations amongst project stakeholders (Rosenfeld, Warszawski, & Laufer, 1991).

Trust in a project is a two way mechanism where both parties accept a level of mutual vulnerability. The trustor must display trusting behaviour, while the trustee needs to display behaviour that is trustworthy, and each party must accept risks arising both roles (Romahn & Hartman, 1999). In a practical context a trusting relationship between the project manager and other team members must demonstrate reciprocal trust, in order to fully realise the potential benefits of a trust based relationship.

The temporary nature of a project

This research establishes the importance of relationships in the project environment. Time is the defining feature of any relationship (Karlsen et al., 2008) and is therefore considered significant, particularly considering the distinguishing characteristics which embody the concept of a project. As a result of the temporary nature of a project, the ability to develop long-term trust in interpersonal relationships is hindered (Munns, 1995), normally being limited to the time frame in which the project must be completed (Hartman, 2002). It is even argued that the temporary nature of a project is fundamentally at odds with the building of
trust, as the establishment of trust is most often realised over a period of time which includes multiple interactions (Dervitsiotis, 2003).

**The unique nature of a project**
The definition of a project adopted for this research highlights the fact that a project is a unique endeavour, and this characteristic is significant in terms of trust and project management. The project environment presents a high degree of randomness and uncertainty, which hinders the development of trust. The people forming the project team may also only be involved because they are available and possess the required skills and expertise, and this can result in a lack of motivation in terms of achieving universal project goals. These challenges are specific to the project environment, and place particular pressures on trust building (Hartman, 2002). In considering trust within the context of project management, the unique nature of a project, and the subsequent influences, must be considered by the project manager.

**Trustworthiness**
To be trustworthy means that one party is prepared and able to act in the best interests of another party (McLain & Hackman, 1995). Research advocates that the characteristics and actions of a project stakeholder will determine the extent to which he or she is more or less trusted by others within the project team (Good, 1988; Johnson-George & Swap, 1982). The following facilitators of trust are therefore considered important to the role of the project manager within the project environment: ability/competence, integrity, benevolence and honesty (McKnight and Chervany, 1995); reliable behaviour, and good communication (Karlsen et al., 2008).

In considering the facilitators research also highlights the mutual interrelationship between the various trust building mechanisms (Lander, Purvis, McCray, & Leigh, 2004). To consider the various attributes in isolation is therefore problematic, as it is difficult to distinguish one from another (Lander et al., 2004).

**Trust and project management**
In considering the concept of trust within the unique context of the project environment, it is apparent that the issue is not limited to trust itself, but to building of trust amongst project
stakeholders. Building trust is central to all aspects of project management, and the role of the project manager (Karlsen et al., 2008). Trust should be considered as a powerful asset for any organisation, and is considered by Romahn and Hartman (1999, p. 1) to be “an essential element of project work”.

If the project manager is able to build trust amongst key stakeholders, the subsequent loyalty created can foster an environment in which stakeholders understand and trust the direction of the project and the organisation as a whole (Beslin & Reddin, 2004). The specific characteristics of a project, as highlighted in this research, significantly impact the building of trust.

A positive team environment

Previous research regarding the influence of trust in project management indicates that trust is crucial to maintaining a positive project team environment (Crisp & Jarvenpaa, 2000; Delisle, 2004). The role of the project manager is central to the development of the culture within the project team, and it is therefore pertinent that the influence of trust in this regard is recognised. If the project manager is able to foster a healthy team environment, other themes of trust discussed previously in this literature review, including relationships, attributes of trust, communication, and behaviour, will also be influenced in a positive way.

Trust is also important across hierarchical levels and between respective organisational departments (Pinto & Slevin, 1987). This encompasses the relationships between the project manager, the project team, and senior organisational management, and trust-based relationships in this regard are significant to achieving project success.

The initial intent of project stakeholders

The outcomes of any given project are influenced by the initial intent and expectations of the parties involved. If the relationship originates with a non-trusting intent, the dynamics of the project will be such that the project will be unsuccessful. The unsuccessful outcome will eventuate because the respective parties will not be willing to move towards the mutual positive result, which is the natural consequence of trust. Non trusting intent may be characterised by poor communication, and a restriction of information, leading to scenarios in which the actions of team members are motivated by self interest, and not the interest of the overall project (Munns, 1995).
Research suggests that the initial project environment, with respect to relations on a project, is not within the control of the project manager. Should the initial environment be one that is not conducive to the natural development of trust, the challenge for the project manager is to reverse the reciprocal nature of a relationship, in which mistrust is reciprocated with a further lack of trust (Munns, 1995).

**Trust and project success**

In considering the human dimension of project management, trust is identified as the most significant determinant of project success (Pinto et al., 2008), and is considered vital to facilitating cooperative processes within the project environment (Kramer, 1999; Wicks, Berman, & Jones, 1999). The relationship between trust and project success is highlighted by Kadefors (2004, p. 176):

“If trust is present, people can spontaneously engage in constructive interaction without pondering what hidden motives exchange partners might have, who is formally responsible for problems, or the risks of disclosing information”.

By improving relationships and maintaining healthy and cooperative partnerships within the project environment, trust has a strong influence on project success (Pinto et al., 2008).

**Modelling trust variables in a project environment**

In order to conduct a thematic analysis of PMBOK it was first necessary to construct a model of the major characteristic variables that impact upon the formation of trust and its subsequent influence on project conduct. The main themes are listed and grouped in Figure 1, however space constraints prevent the detailed sub themes and references for each to be listed: these extend to 74 codes extracted from 25 sources, which have been substantially elucidated in the preceding sections.
Methodology

This research is essentially a qualitative content analysis of a document (Kolbe and Burnett, 1991, p. 244) in this case PMBOK, to determine the extent to which it reflects concepts established elsewhere in the literature, as summarised in Figure 1. In this regard care has to be taken to ensure the credibility of findings in respect to collection, analysis, and interpretation of data. Since both the model of trust variables (summarised in Figure 1) and the results of its application to PMBOK (Findings) hinge on achieving this convincingly (White and Marsh, 2006, p. 38-39) particular attention has been paid to the issues of abstraction and researcher triangulation.

Morse and Richards (2002) identify the concept of abstraction as being essential to all forms of qualitative research. In a qualitative research study, the data and not the subjective
influence of the researcher should provide confirmation of the conclusions reached. In this regard, the important criterion is the “conceptual consistency between observation and conclusion” (White and Marsh, 2006, p. 38-39).

The process of researcher triangulation proposed by Harvey and MacDonald (1993), in which two or more researchers use the same research technique, is considered appropriate for three reasons: firstly, to reduce the effects of coder subjectivity; secondly, to increase coding confirmation, and; thirdly to increase research credibility (Morse and Richards, 2002).

At all stages in the research the following tenets were applied: first pass coding and concurrent abstraction to establish open codes; second pass coding to add detail codes to ‘code trees’; coding meetings between researchers to compare coding outcomes and resolve coding conflicts, and; establishment of ‘concept proxies’ to allow clear coding outcomes by minimising coding conflicts.

The original study contained 18 A3 pages detailing specific analysis of the coding, linking each concept to the specific sections and text passages within PMBOK, together with an explanation of each occurrence. The coded themes that were not evident within PMBOK were subsequently highlighted with grey shading: a sample extract is shown in Figure 2.
Figure 2. Sample extract from coding tables.

<table>
<thead>
<tr>
<th>Themes</th>
<th>Dimensions: (axial codes)</th>
<th>Coded occurrences in PMBOK (text and reference number)</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competence</td>
<td>Competence is a significant determinant of trust (Costigan et al., 1996; Larsson et al., 2006; Lader et al., 2004); Competence trust: One party’s belief that another party is competent to undertake the allocated work (Harman, 1999); Evidence of competence: Past experience, certification, reputation, job title, affiliation with a professional association.</td>
<td>9.1.1.1 &quot;Training needs: if the team members to be assigned are not expected to have the required competencies, a training plan can be developed as part of the project. The training plan will also include ways to help team members obtain certifications that would support their ability to benefit the project” (PMI, 2005, p. 227). 9.1.1.2 The enterprise factors that can influence the Acquire Project Team process include, but are not limited to: Existing information for human resources, including who is available, their competency levels, their prior experience, their interest in working on the project, and their cost rate” (PMI, 2005, p. 227).</td>
<td>PMBOK recognises that the competence of the respective team members will influence the outcomes of the project. In this regard, certifications which support the ability of team members to benefit the project are accepted as evidence of competence. Competence is identified as a factor to be considered when acquiring the human resources for the project team, with prior experience accepted as evidence of competence.</td>
</tr>
<tr>
<td>Benevolence</td>
<td>Benevolence is described as one party’s belief that another party will act compassionately, and it is considered a common characteristic of trust (Larson &amp; Panetta, 2006); Benevolence suggests an emotional attachment between a leader and a trustor (Beyer et al., 2005), and it is essentially concerned with relationships amongst members of the project team.</td>
<td>9.1.1.2 “The project management team can greatly reduce problems and increase cooperation by understanding the sentiments of project team members, anticipating their concerns, acknowledging their concerns, and following up on their issues. Skills such as empathy, influence, creativity, and group facilitation are valuable assets when managing the project team” (PMI, 2005, p. 227).</td>
<td>This axial code identifies the items of benevolence when considering relationships amongst members of the project team. In this regard, perceptions of benevolent behavior are recognized by PMBOK, and are considered important in reducing problems and increasing cooperation within the project team.</td>
</tr>
</tbody>
</table>
Results and Discussion

The content analysis sought evidence that PMBOK acknowledged the broader issues concerned with trust, associated with the project manager’s role in achieving project success. Figure 2 summarises the findings in regard to the main trust themes, locating them within the structure of PMBOK. The second column identifies the number of axial detail codes associated with each trust theme. Crucially, the final column indicates the number of axial detail codes that remain unaddressed by PMBOK, the implications of which are now discussed in the following sections.
Figure 3. Summary of coding outcomes including numbers of axial codes, location of use within PMBOK, and numbers of unfound codes after analysis.
Risk, vulnerability and uncertainty

Risk must be present in order for trust to arise (Deutsch, 1958), and trust and its attendant benefits cannot transpire without one party accepting a degree of risk. Trust within the project environment also helps to reinforce an individual’s positive motivation towards the overall objectives of a project (Wong et al., 2008). PMBOK acknowledges the presence of risk and uncertainty in the project environment. However the link between the presence of risk and the subsequent opportunity for trust-building goes unremarked.

Control mechanisms

The fear of penalty for non-performance provides the project manager with a potent control mechanism. The certainty that this provides removes a measure of risk, especially for others in the project team. As a consequence the exercise of control mechanisms can create a level of trust amongst project participants based upon risk reduction (Wong et al., 2008). Whilst PMBOK is vocal on the need to control risk it does not recognise the ability of trust to reduce the requirement for control, through fostering project relationships in which parties are able to operate without fear of exploitation (Aubert & Kelsey, 2000). Conversely PMBOK fails to caution against the exercise of excessive control, which can be detrimental to the development of trust amongst the project team (Aubert & Kelsey, 2000).

Relationships

Fostering trust is part of the team building process, which must necessarily require the formation of interpersonal relationships (Pinto et al, 2008). PMBOK recognises that teambuilding is integral to the project manager’s role, however it does not explicitly acknowledge that without the presence of these relationships trust cannot develop, and offers no guidance as to how they should be formed and conducted. Equally, the need to build trust specifically to facilitate cooperative relationships that allow open communication and effective interaction within the project team goes unacknowledged.

Time is regarded as a defining feature of any relationship (Karlsen et al., 2008). Projects occupy a specific span of time, forcing the pace at which relationships have to form and develop, something that the project manager has a vested interest in facilitating. Moreover these usually start from a low base, hopefully developing in order to achieve well functioning relationships (Karlsen et al., 2008). The uncertainties resulting from the unique nature of
projects only add to the challenge of achieving effective interaction within the project team. PMBOK does not address the temporal dimension the development of relationships in projects and the ways in which this can influence the need for/development of trust.

The temporary nature of a project
The temporary nature of a project organisation is a significant influence on the project environment, which in turn influences the way in which trust may develop between the project participants. It has been found that the temporary nature of the project environment hinders the development of trust-based relationships (Munns, 1995), as the time available to build trust is limited (Hartman, 2002). Likewise, trust is established over a period of time that includes multiple interactions (Dervitsiotis, 2003). The time constraints found in project environments are not naturally conducive to multiple interactions therefore the importance placed upon trust formation is increased (Atkinson et al., 2006). In this regard, the shortfalls of PMBOK are considered noteworthy, as recognition of PMBOK ignores the connections between the development of trust-based relationships, transient relationships, and the project manager’s attributes that facilitate trust within the project environment.

The unique nature of a project
The unique nature of a project is a significant consideration in shaping the project environment, given that it leads to inherent uncertainty (Hartman, 2002). PMBOK acknowledges the degree of uncertainty that is a factor in all projects. However it fails to identify its detrimental influence on the development of trust amongst the project team. The unique nature of a project can be damaging to the individual participant’s motivation required to achieve the shared project objectives. The ubiquitousness of conflicting goals in a temporary project organisation (Brewer and Runeson, 2009) places particular pressures on the ability to develop trust.

Trustworthiness
The human element of project management is fundamental to PMBOK, and trustworthiness is the behavioural characteristic where one party is prepared to act in the best interests of another party (McLain & Hackman, 1995). Trustworthiness is characterised by the actions of project stakeholders, and determines the level to which project team members are more or less trusted (Good, 1988; Johnson-George & Swap, 1982). With the interaction of the project
team fundamental to achieving successful outcomes, the dimension of trustworthiness is obviously significant, and in this regard, the various trust building mechanisms which facilitate trustworthiness are mutually related to a high degree (Lander et al., 2004). In light of this it is surprising that PMBOK has no comment on the matter.

**Reliable behaviour**
Reliable behaviour allows project interactions to proceed with confidence, and ultimately contributes to a project environment that is conducive to the development of trust in stakeholder relationships. Reliability leads to reciprocal behaviour. This can be positive or negative, where distrusting actions are countered with a response which is also distrustful (Karlsen et al., 2008). Unreliable behaviour inhibits the development of trust and fosters an environment which is distrusting (Lander et al., 2004). PMBOK touches on the concept of reliable behaviour however it fails to distinguish the dimensions of reliability considered important for trust building within the project environment, specifically avoiding mention of reciprocity.

**Communication**
Communication is fundamental to all aspects of project management. PMBOK identifies the significance of communication in achieving project success, acknowledging also the connection between trust and communication in the project environment. While PMBOK does recognise the importance of communication in facilitating trust, it does not examine the idea that the converse is also true, that trust can free up the exchange of information which is vital to effective and efficient project outcomes which might not happen in the absence of trust (Aubert & Kelsey, 2000).

**Competence**
An abundance of literature identifies competence as a significant determinant of trust (Costigan et al., 1998; Karlsen et al., 2008; Lander et al., 2004). Competence trust is described as one party’s belief that another party is competent to undertake the allocated work (Hartman, 1999), and in this regard, the ability of the respective team members is an essential element of trustworthiness (Butler, 1991; Deutsch, 1958; Gabarro, 1978; Sitkin & Roth, 1993). PMBOK does identify competence as a determinant of project success, however the relationship between competence and trust is not distinguished.
Benevolence

Benevolence is described as one party’s belief that another party will act compassionately, and is considered a common characteristic of trust (Lamsa & Pucetaite, 2006). Benevolent behaviour can increase the propensity to trust by facilitating a trusting predisposition amongst project stakeholders (Mayer et al., 1995). While PMBOK does consider and explore the concepts of benevolence within the project environment, it does not link it to the development of trust.

Integrity

Integrity deals with the trustor’s perception that the trustee will adhere to a set of principles which are acceptable to the trustor, with this perception implying a degree of reliability and dependability towards the trustee (Mayer et al., 1995). PMBOK does recognise the influence of integrity on the relationships and attitudes within the project environment. However the association between integrity and trust is not explained. Integrity trust has been described as a belief that one party will protect the welfare of another party (Hartman, 1999), and with integrity considered an antecedent to trust, this omission by PMBOK is considered noteworthy.

Honesty

Honesty implies that there will be no attempt to deceive, and is considered a personal characteristic associated with objective credibility (Munns, 1995). Sincerity is also closely associated with honesty, being defined as “the degree to which people mean what they say and whether their promises are shallow or deep” (Dervitsiotis, 2003, p. 513). Honesty and sincerity are fundamental to effective interactions between project team members and the consequent outcomes. Honest/sincere behaviour is evident when sharing information openly, admitting mistakes, completing tasks as agreed, and acting at all times in a manner that portrays trustworthiness. PMBOK does not identify the influence of honesty on trust building within the project team.

Trust and project management

PMBOK does consider the need for fostering trust and team building within the project environment, and in this regard, places particular emphasis on the role of the project manager. In spite of this however, PMBOK does not explicitly demonstrate the fundamental
benefits of trust to a project organisation, and fails to emphasise that trust is “an essential element of project work” (Romahn & Hartman, 1999, p. 1).

**A positive team environment**

Trust is crucial to maintain a positive team culture (Crisp & Jarvenpaa, 2000; Delisle, 2004). PMBOK is vocal on the need to maintain a positive team environment, however it fails to make explicit the connection with trust in this regard.

**The initial intent of project stakeholders**

Non-trusting intent is detrimental to the success of a project, and may be characterised by poor communication and a restriction of information, driven by self interest (Munns, 1995). Additionally the nature of initial project environment may be outside the control of the project manager (Munns, 1995). Analysis of PMBOK reveals the initial intent and expectations of the parties involved are recognised as influences on project outcomes, however strategies to foster trust and ongoing trust building are absent as specific considerations.

**Trust and project success**

Trust allows interaction without the need to consider hidden motives, or risks associated with disclosing information (Kadefors, 2004), arguably becoming the most significant determinant of project success (Pinto et al., 2008). In this regard PMBOK makes links between trust and project success, albeit indirectly through a recognition that trust can facilitate cooperative relationships, effective communication, and teamwork.

**Conclusions**

Literature indicates that trust issues have a pivotal role in determining the eventual stakeholder experiences in a project environment, which in turn can have a significant impact on the project outcomes. PMBOK is widely accepted as the document that enshrines best practice in the field of project management, and as such could be expected to have much to say on the subject of trust. The latest edition of PMBOK has, by its inclusion of trust, both as a concept and a desirable attribute within projects, made a significant advance on previous editions. However its silence in regard to the specifics of how trust should be initiated, developed, and maintained throughout the life of a project could be regarded as a flaw. This
raises the question as to why it is necessary for PMBOK to outline the conceptual and
descriptive dimensions of trust, without providing guidance on the procedures and processes
trust-building and trust-maintenance require in practice. It is perhaps necessary to relate
PMBOK itself to the contexts within which its tenets might be applied.

As an American National Standard PMBOK is required to define the attributes of an
appropriate process -- in this case project management – and compliance with this process is
intended to result in "best practice" outcomes. PMBOK is therefore a design standard, albeit
for diverse processes associated with equally diverse projects, set in a multiplicity of different
industries. By contrast the concept of trust is an essentially abstract one, spanning all areas of
human existence, existing in the minds of trustors and trustees, the result of both anticipated
and actual experiences. Therefore in many respects the design of processes intended to foster
trust and trust-building must necessarily be linked to processes for coping with the
anticipated and actual intentions of others.

There is a contradiction between on the one hand the need to provide a design standard, and
on the other the desirability of assisting those using the standard to deal with the intended
behaviours of their trading partners. This occurs on the conceptual level, as a procedure
ought to demonstrate a causal link between action and outcome, whereas actions designed to
foster trust and trustworthiness among project team members cannot guarantee to produce the
desired outcomes.

For construction practitioners……

Ultimately a document defining processes and procedures for managing a project must be
predicated on the notion that the trading entities involved in the project will act in a rational
manner when enacting those processes and procedures, working towards a shared set of
project goals. The same assumption cannot be made about the individuals who make
decisions on their behalf: their actions are necessarily boundedly rational, incorporating as
they do the gamut of personal experiences, biases and prejudices acquired during their
working lifetime. The challenge for a project manager is therefore to develop their skills
beyond mere process implementation, in order to successfully foster a culture of trust among
the resources within their sphere of influence.
References


4.3 Publication number two

4.3.1 Statement of authorship and contribution of others

Publication details


The co-authors attest that their involvement in the production of this paper was limited to supervision of the candidate, confirmation of alignment of its contents with its stated aim and objectives, typographical/stylistic checking and advising the candidate that as to appropriate responses to reviewers comments.

Graham Brewer

Thayaparan Gajendran

Grant Webber, Assistant Dean Research Training, Faculty of Engineering and Built Environment.
4.3.2 Introduction

Publication number two is titled “The influence of trust in traditional contracting: Investigating the “lived experience” of stakeholders”, and was published in The Australian Journal of Construction Economics and Building (UTS ePRESS publication).

Publication details are as follows:


4.3.3 Exhibit Two – The influence of trust in traditional contracting: Investigating the “lived experiences” of stakeholders
THE INFLUENCE OF TRUST IN TRADITIONAL CONTRACTING: INVESTIGATING THE "LIVED EXPERIENCE" OF STAKEHOLDERS

Abstract
The traditional procurement approach is ever-present within the construction industry. With fundamental design principles founded on definitive risk allocation, this transactional based approach fails to acknowledge or foster the cooperative relationships considered to be vital to the success of any project. Contractual design encourages stakeholders to defend their own individual interest to the likely detriment of project objectives. These failings are not disputed, however given that trust is a fundamental requirement for human interaction the influence of trust is potentially important in terms of stakeholder relationships and ultimate project success. Trust is therefore examined within this context.

A conceptual framework of trust is presented and subsequently used to code and analyse detailed, semi-structured interviews with multiple stakeholders from different projects. Using a phenomenological investigation of trust via the lived experiences of multiple practitioners, issues pertaining to the formation and maintenance of trust within traditionally procured construction projects are examined.

Trust was found to be integral to the lived experiences of practitioners, with both good and bad relationships evident within the constructs of traditional procurement mechanisms. In this regard, individual personalities were considered significant, along with appropriate risk identification and management. Communication, particularly of an informal nature, was also highlighted. A greater emphasis on project team selection during the initial stages of a project would therefore be beneficial, as would careful consideration to the allocation of risk. Contract design would also be enhanced through prescriptive protocols for developing and maintaining trust, along with mandated mechanism for informal communication, particularly when responding to negative events. A greater understanding regarding the consequences of lost trust and the intricacies of trust repair would also be of value.

Keywords: Traditional project procurement, trust, trust repair, relationships

Research article
Introduction
The construction industry environment is inherently challenging, wherein the management and appropriate allocation of risk, and the ability to deal with states of rapid change are critical skills (Sakal, 2005). The traditional procurement approach regularly adopted across the industry embodies transactional-based precepts and is consequently constrained by them (Forgues and Koskela, 2009, Ibrahim et al., 2011), particularly when dealing with complex and high risk endeavours (Campbell, 2004).

Traditional procurement mechanisms are intended to definitively allocate risk amongst stakeholders despite the fact that, at the project outset, it is fundamentally impossible to accurately predict all of its risks and uncertainties (Macneil, 1978). Moreover, in focussing on potential uncertainties they fail to recognise or facilitate the cooperative relationships that are considered critical to the success of a contractual arrangement, particularly in terms of dealing with the unforeseeable (McInnis, 2003).

Similarly, the principles underpinning traditional procurement mechanisms ensure that the respective parties act in a manner which defends their own individual interests, often leading to disputes and outcomes not consistent with what is best for the project as a whole (Chan et al., 2006). Adversarial relationships characterised by conflict are thus triggered (Chen and Chen, 2007) by the competitive, fixed price environment of the traditional contract (Pesamaa et al., 2009). From project inception onwards, onerous contract conditions potentially discourage responsible tendering, attracting opportunistic parties to enter into an agreement with devious intentions. These are based on unrealistic tender pricing in anticipation of variations (Rahman and Kumaraswamy, 2004), and exploitation of weaknesses in the contract documentation (Mosey, 2003).

Ultimately traditional procurement mechanisms have been found to negatively impact on project outcomes in terms of disputes (Pesamaa et al., 2009), distrust, mistrust and conflict (Sakal, 2005), loss of productivity (Ng et al., 2002), high levels of litigation (Yiu and Cheung, 2007), a prevalence for disagreement rather than cooperation (Wood and McDermott, 2001), cost blow outs and project delays (Chan et al., 2003). The failings of traditional procurement mechanisms and the need for alternatives have therefore been broadly acknowledged by literature (Chen and Chen, 2007).

In light of these acknowledged deficiencies, the influence of trust has the potential to be significant in terms of stakeholder relationships and overall project success (Pinto et al.,
2008). Trust is considered to be a fundamental requirement for human interaction (Romahn and Hartman, 1999), and there is widespread agreement on the value of trust in human behaviour (Bigley and Pearce, 1998). Similarly, trust is deemed vital to facilitating cooperative processes within the project environment (Kramer, 1999, Wicks et al., 1999). Hence, by way of improving relationships and maintaining healthy partnerships, the importance of trust within a transactional procurement context is logically significant (Pinto et al., 2008). This research therefore investigates trust within this context. To this end, the influence of trust within other procurement mechanisms is acknowledged (She, 2013, Strahorn et al., 2013, Yeung et al., 2007), however, an investigation of trust other than within traditional procurement mechanisms is intentionally not within the scope of this paper.

For the purpose of this study, the definition of trust provided by Rosseau, Sitkin, Burt and Camerer (1998, p. 395) has been adopted;

“Trust is a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviour of another”.

Within the context of this research, trust has not been considered as a behaviour but rather as a psychological state experienced by practitioners. Furthermore, trust has been distinguished from cooperative relationships, which can be present even without trust; mere compliance as an observed behaviour has therefore not been taken to imply the existence of trust (Brewer and Strahorn, 2012).

Building upon these precepts, this research adopts a phenomenological lens to explore the formation and maintenance of trust through the lived experiences of multiple practitioners within construction projects procured utilising traditional procurement mechanisms. E.g. lump sum, construct only, and design and construct contracts. A theoretical framework of trust is presented that drove the design and conduct of detailed, semi-structured interviews, facilitating their subsequent coding and analysis. This reveals the importance of communication, particularly of an informal nature, as well as appropriate risk identification and management, and individual stakeholder personalities to the success of traditionally procured projects. Limitations regarding the appropriateness of the traditional procurement approach are also exposed. By way of enlightening the influence of trust within the context of a traditional procurement environment, potential improvements in the design and implementation of future traditional procurement mechanisms have been highlighted. A
greater understanding of trust on the part of project participants is also likely to influence individual attitudes and behaviours, with enhanced project outcomes the result.

**Literature Review**

When considering past research, contextual specifics have provided the impetus for the development of varied definitions and models of trust. Debate and ambiguity have resulted (Hartman, 1999) with the subjective nature of trust proving to be the limiting factor in terms of developing a universally applicable trust model (Becerra et al., 2001). In order to ensure appropriateness for use in a project environment, this research has focused substantially on the discipline of management, with a thematic review of existing trust models and literature resulting in a comprehensive framework of trust themes (Brewer and Strahorn, 2012): this is summarised in Figure 1 and expanded upon thereafter.

**Human variables**
- Relationships, trust and the project environment
- Relationship interactions and trust
- The initial intent of project stakeholder

**Attribution variables**
- Trustworthiness
- Reliable behaviour
- Communication
- Competence
- Benevolence
- Integrity
- Honesty

**Contextual variables**
- Risk, vulnerability and uncertainty
- Control mechanisms
- Team environment
- Trust and project outcomes
- Trust and the temporary nature of a project
- Trust and the unique nature of a project
- Trust and project management

**Trust Failure**
- Trust breakdown
- Trust repair
- Trustworthiness factors and trust repair
- Social explanations for negative events
- Apology or denial
- Competency or integrity trust violations
- Apology and internal or external attributions
- Outsourcing

Figure 1: Thematic Trust Framework (main theme codes)

Source(s): Adapted from (Brewer and Strahorn, 2012)

**Human Variables**

Literature is eloquent regarding the human dimension to trust, with the nature of relationships central in this regard. A relationship can be expressed as the condition in which objectives are achieved via a dependence on another party (Sheppard and Sherman, 1998). The
development of trust cannot eventuate without the existence of a relationship (Rosseau et al., 1998); similarly cooperative relationships cannot exist without trust (Misztal, 1996). Relationships have a temporal dimension (Karlsen et al., 2008), and the ongoing interactions which underpin a relationship are a fundamental determinant of trust (Tomlinson and Mayer, 2009).

The correlation between project success and trusting stakeholder relationships is also strong (Pinto et al., 2008), however the full benefits of a trusting relationship cannot be realised unless the trust between the parties is mutual (Romahn and Hartman, 1999).

In terms of relational interactions, positive or negative experiences underpin the casual attributions which individuals form towards one another: such ascriptions arise out of perceived causality, controllability and stability (Weiner, 1986), which consequently dictate future expectations and emotional responses (Tomlinson and Mayer, 2009). Ultimately trust levels between parties are re-assessed and decisions regarding the propensity for future risk taking are made accordingly (Mayer et al., 1995).

The initial intent and expectations of project stakeholders are significant in terms of ultimate project success (Munns, 1995). While a pre-emptive demonstration of trustworthy behaviour at the commencement of any exchange relationship comes with some risk, the full benefits of trust are likely to be forfeited if an alternate display of non-trusting intent is evident (Whitener et al., 1998). An initial non-trusting intent will ultimately be detrimental to project success (Munns, 1995).

Trust provides the foundation for human interaction (Romahn and Hartman, 1999). An understanding of the function and operation of trust is therefore important in terms of stakeholder relationships and interactions within traditionally procured projects, where recourse to contractual remedies are inevitably regarded as non-trusting actions.

**Attribution Variables**

Within a project environment the attribution by someone of some quality or characteristic to another person within the project team is a key behaviour. In order to be deemed trustworthy, one party must display a willingness to act in the best interests of another party (McLain and Hackman, 1995); to this end an individual’s characteristics and actions determine the extent to which they are more or less trusted (Good, 1988). Trust building mechanisms that are considered to be important and mutually related to a high degree (Lander et al., 2004)
include communication, reliable behaviour, (Karlsen et al., 2008), benevolence, competence, integrity and honesty (McKnight and Chervany, 1995). Attribution variables are therefore significant in terms of trust and its influence (Brewer and Strahorn, 2012).

**Contextual Variables**

Uncertainty and risk are unavoidable in any project environment (Schwalbe, 2004), and it is trust in all its forms that ultimately aids the resolution of issues in this regard. Trust (and the subsequent benefits of trust) cannot eventuate without one party accepting some amount of risk (Chow et al., 2012): within a project context the presence of trust reinforces an individual’s motivation towards achieving the overall objectives of a project (Wong et al., 2008).

The provision of control mechanisms that both manage risk and minimise stakeholder vulnerability facilitates the development of trust in the project context (Wong et al., 2008). Conversely, excessive control can have a negative influence on the development of trust, and potentially result in distrust among project partners (Pinto et al., 2008). Given that the enactment of any control mechanism results in additional project cost, the presence of trust has the potential to reduce the requirement for control. In this way the nurturing of stakeholder relationships allows individuals to interact without the concern of being exploited (Aubert and Kelsey, 2000).

Trust is also considered to be critical in terms of maintaining a positive team environment (Delisle, 2004); equally, a healthy team environment will have a positive influence on the development and subsequent maintenance of trust. This is crucial for assisting cooperative processes (Kramer, 1999), and these improved relationships increase the likelihood of positive project outcomes for all stakeholders (Pinto et al., 2008).

A project by definition is fundamentally a temporary endeavour (PMI, 2008), with this characteristic of significant consequence in terms of building trusting relationships. To this end, the time available to develop trust is limited to the timeframe in which the project must be completed (Hartman, 2002), and as a result, the opportunity to develop long-term trust in interpersonal relationships is hindered (Munns, 1995). The establishment of trust is most often realised over a period of time which includes multiple interactions (Dervitsiotis, 2003). Within the context of a project environment and the development of stakeholder relationships, the importance of trust is therefore subsequently increased (Atkinson et al.,
Conversely however, while the temporary nature of a project may not be absolutely conducive to the development of trusting relationships (Munns, 1995), provided there is no evidence to the contrary, trust during the initial stages of a relationship can actually be bolstered by a natural assumption to trust (McKnight et al., 1998). Furthermore, individuals can display high levels of trust even in relationships without any prior history (Meyerson et al., 1996).

**Trust Failure**

Whilst the benefits of trust creation and maintenance are logically apparent, the realities of project environments mean that the breakdown of trusting relationships frequently occurs. The need to understand the processes involved in repairing this damage is therefore important. Negative events in any project directly influence stakeholder relationships, and the subsequent breakdown in trust can have significant consequences (Lewicki and Bunker, 1996), resulting in reduced trust and the need for trust repair (Kim et al., 2004). The underlying trigger for a negative event will affect the perceptions of trust differently for those involved in it (Lewicki and Bunker, 1996), according to internal, controllable or stable characteristics afforded to the trustee (Tomlinson and Mayer, 2009). Of these, stability is deemed to be the most influential (Weiner, 2001). This is because occurrences that are believed to typify context-specific behaviour facilitate the perception that, under similar circumstances, the same results can be expected in the future (Sitkin and Roth, 1993).

When considering the repair of lost trust – notwithstanding a mistrusted party’s attempts to exhibit trustworthiness – low levels of trust will be compounded by the trustor’s memories of the earlier trust violation (Slovic, 1993). The trust repair process is therefore more complex than initial trust development, since trust repair efforts must not only restore positive expectations in a relationship, but also overcome negative expectations (Kim et al., 2004). Any trust repair effort is therefore likely to require greater effort than was initially required to establish a trusting relationship (Kim et al., 2006).

**Methodology**

This study was predicated on the notion that the perception of trust by trustors and trustees is a phenomenon that can be revealed by the purposeful, detailed interrogation of their lived experiences. Moreover, given the absence of a project-specific theory of trust, the adoption of a ‘constructivist’ perspective (Cresswell and Plano Clark, 2007) was deemed appropriate to
examine the diverse perceptions and experiences of construction practitioners in order to develop a theoretical contribution. Driven by these methodological precepts, a phenomenological research method was conceived, utilising the ‘emic’ perspective (Pike, 1967) necessary in order to capture lived experience; an interview based study was clearly indicated. With regards to trust and its influence, the phenomenological approach has accurately conceptualised the meaningful world that exists via experience. To this end, the significance of lived situations have been examined, and the experience of trust has been described (Wertz et al., 2011).

A total of 26 interviews provided the data for this study, with details regarding the respective interviewees and subsequent coding identification included in table 1. Six individual stakeholders from different sectors and multiple projects were interviewed. A further twenty stakeholders were interviewed from three separate projects. Selection and recruitment of the research participants was determined by pragmatism. To this end, all participants were accessibly located, suitably experienced (5+ years of responsibility in their respective role) and had experience in the delivery of major projects procured under traditional procurement mechanisms. Each interview was carried out at a location selected by the participant and was approximately one hour in length. The questions firstly set out to clarify the roles of the respective interviewees, and then examined their attitudes to stakeholder relationships, culture and leadership in general. Questions were then focused more specifically within the context of traditional procurement mechanisms. Accordingly, the data collected via the semi-structured, in-depth interviews was recorded and professionally transcribed.

Table 1: Interviewee details

<table>
<thead>
<tr>
<th>Coding Identifier</th>
<th>Designation</th>
<th>Nature of Organisation</th>
<th>Stakeholder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consultant # 1: Project Manager</td>
<td>Project Manager</td>
<td>A large Engineering Consultancy/ Project Management Organisation</td>
<td>Project Management</td>
</tr>
<tr>
<td>Contractor # 1: Project Manager</td>
<td>Project Manager</td>
<td>Small Regional Building Construction Organisation</td>
<td>Contractor</td>
</tr>
<tr>
<td>Client # 1: Contracts Manager</td>
<td>Contracts Manager</td>
<td>Government Infrastructure Construction PM unit</td>
<td>Client</td>
</tr>
<tr>
<td>Contractor #2: Project Engineer</td>
<td>Project Engineer</td>
<td>Client Representative in a Major Rail Infrastructure Construction Coal Supply</td>
<td>Contractor</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-----------------</td>
<td>--------------------------------------------------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>Client #2: Senior Project Manager</td>
<td>Senior Project Manager</td>
<td>Government Infrastructure Construction PM unit</td>
<td>Client / Project Management</td>
</tr>
<tr>
<td>Client #3: Senior Project Manager</td>
<td>Senior Project Manager</td>
<td>Government Infrastructure Construction PM unit</td>
<td>Client / Project Management</td>
</tr>
<tr>
<td>Contractor #3- Project Manager</td>
<td>Project Manager</td>
<td>Contractor for Warehouse Distribution Project</td>
<td>Contractor</td>
</tr>
<tr>
<td>Client #4- Project Manager</td>
<td>Director</td>
<td>Client for Warehouse Distribution Project</td>
<td>Client</td>
</tr>
<tr>
<td>Consultant #2- Project Manager</td>
<td>Project Manager</td>
<td>Project Manager for Warehouse Distribution Project</td>
<td>Project Management</td>
</tr>
<tr>
<td>Consultant #3- Architect</td>
<td>Architect</td>
<td>Architect for Warehouse Distribution Project</td>
<td>Architectural Consultant</td>
</tr>
<tr>
<td>Consultant #4- Engineer</td>
<td>Senior Engineer</td>
<td>Engineer for Warehouse Distribution Project</td>
<td>Engineering Consultant</td>
</tr>
<tr>
<td>Consultant #5- Quantity Surveyor</td>
<td>Quantity Surveyor</td>
<td>Quantity Surveyor for Warehouse Distribution Project</td>
<td>Quantity Surveyor Consultant</td>
</tr>
<tr>
<td>Subcontractor #1- Electrical Services</td>
<td>Project Manager</td>
<td>Subcontractor for Warehouse Distribution Project</td>
<td>Subcontractor</td>
</tr>
<tr>
<td>Contractor #4- Project Manager</td>
<td>Project Manager</td>
<td>Contractor for Hospital Extension- Public Health Organisation</td>
<td>Contractor</td>
</tr>
<tr>
<td>Consultant #6- Architect</td>
<td>Architect</td>
<td>Architect for Hospital Extension- Public Health Organisation</td>
<td>Architectural Consultant</td>
</tr>
<tr>
<td>Consultant #7- Engineer</td>
<td>Senior Engineer</td>
<td>Engineer for Hospital Extension- Public Health Organisation</td>
<td>Engineering Consultant</td>
</tr>
<tr>
<td>-----------------------------------------------------------------</td>
<td>----------------</td>
<td>-------------------------------------------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>Consultant #8- Quantity Surveyor</td>
<td>Quantity Surveyor</td>
<td>Quantity Surveyor for Hospital Extension- Public Health Organisation</td>
<td>Quantity Surveyor Consultant</td>
</tr>
<tr>
<td>Subcontractor #2- Internal partitions and linings</td>
<td>Project Manager</td>
<td>Subcontractor for Hospital Extension- Public Health Organisation</td>
<td>Subcontractor</td>
</tr>
<tr>
<td>Client #5- Project Manager</td>
<td>Project Manager</td>
<td>Client for Hospital Extension- Public Health Organisation</td>
<td>Client</td>
</tr>
<tr>
<td>Consultant #9- Project Manager</td>
<td>Project Manager</td>
<td>Project Manager for Hospital Extension- Public Health Organisation</td>
<td>Project Management</td>
</tr>
<tr>
<td>Contractor #5- Project Manager</td>
<td>Project Manager</td>
<td>Contractor for Car park extension to accommodate office/educational facilities for an educational institution</td>
<td>Contractor</td>
</tr>
<tr>
<td>Consultant #10- Client Representative</td>
<td>Project Manager</td>
<td>Client for Car park extension to accommodate office/educational facilities for an educational institution</td>
<td>Client</td>
</tr>
<tr>
<td>Consultant #11- Project Manager/Quantity Surveyor</td>
<td>Quantity Surveyor / Project Manager</td>
<td>Quantity Surveyor and Project Manager for Car park extension to accommodate office/educational facilities for an educational institution</td>
<td>Quantity Surveyor Consultant / Project Management</td>
</tr>
<tr>
<td>Consultant #12- Architect</td>
<td>Architect</td>
<td>Architect for Car park extension to accommodate office/educational facilities for</td>
<td>Architectural Consultant</td>
</tr>
</tbody>
</table>
The interview data was subsequently subjected to a thematic analysis process, framed against the developed trust framework (Figure 1), made up of 25 open codes, and 74 axial codes (Brewer and Strahorn, 2012). In broad terms, the data was approached so that the first analytical pass sorted it according to question, and then utilised open coding to reveal predominant trust themes independently of the questions’ subject. Thereafter, each of these themes was investigated during second and third analysis rounds utilising axial coding techniques in order to provide detail (where appropriate) to the open code themes. That is, axial codes forthcoming form the developed trust framework were used to guide the subsequent analysis and discussion of pertinent trust themes. The deconstructed, thematically arranged analysis was then subjected to a process of synthesis whereby recurrent themes from across the different interviews were constructed and explained, by confirmatory reference to existing theory wherever possible, and signalling potential theoretical contributions where this was not possible.

Results

In striving for the development of new theory the evaluation of emerging ideas relative to existing literature is considered to be important (Eisenhardt, 1989). Analysing the interview transcripts with reference to the developed framework of trust themes (Figure 1) facilitated the identification of trust-related issues from real world perspectives, while concurrently highlighting agreement or disagreement with the existing literature. In this regard, Table 2 in Appendix 1 provides a condensed summary of the interviewee quotations central to these
results, and as applicable to the experiences of the research participants in terms of trust and its influence.

**Human Variables**

**Relationships, trust and the project environment**

The value of positive stakeholder relationships was commonly mentioned, and its link to eventual project success was widely accepted (Pinto et al., 2008). The presence of open and honest communication, collaboration, cooperation, diplomacy, and positive interactions in general, were all considered conducive to a positive project team environment and of consequent benefit to project performance. On the other hand, when a project participant displayed negative traits such as exploitative behaviour, overly overbearing use of project control mechanisms, unreciprocated trust, unreliability, and an unwillingness to accept responsibility, project outcomes were almost inevitably impacted in a negative way.

The nature of stakeholder relationships was widely described as being contingent upon various influences, including control mechanisms, fulfilment of contractual obligations, allocation and consequent management of risk, and levels of stakeholder profitability. Nevertheless, individual personalities were ultimately felt to be the single most important influence upon project outcomes since they had the power to shape – both positively and negatively – the development of project team culture. The values they brought to the project were moulded by their prior experiences, which largely dictated their initial intent. This could be further modified over time through their interactions with others in the project team, and occasionally by their expectation of building a strategic relationship that would endure beyond the current project.

Traditional procurement mechanisms were not of themselves regarded as an impediment to good stakeholder relationships, and when adverse events did occur it was widely recognised that the existence of good relationships were central to achieving positive resolutions. Moreover, the existence of strong relationships was widely believed to provide a disincentive for exploitative behaviour and to overcome the inclination to resort to adversarial problem-solving.

In light of the foregoing, it was perhaps surprising how few interviewees were able to point to proactive measures to develop relationships and trust. Whilst most espoused the value of trust and relationships in achieving project goals (Misztal, 1996), few could explain how to set
about ensuring that this would occur. Two clues as to why this might be the case emerged: firstly, the ongoing and frequent need to develop new relationships on a project by project basis, and; secondly, the essentially informal nature of relationship building (its dependence upon compatible personalities). As trusting relationships foster project success (Pinto et al., 2008), and cooperative relationships are facilitated through trust (Misztal, 1996), a greater emphasis on the need to actively pursue the development of relationships and trust between contracting parties within a traditional procurement context would be advantageous.

**Relationship interactions and trust**

In terms of developing and maintaining trusting relationships, most interviewees linked future intentions to past experiences. The pre-existence of a trusting relationship with a trading partner was most likely to result in an ongoing trusting relationship in the current project. Conversely the adage "once bitten, twice shy" was invoked by a number of interviewees, frequently expressing risk averse sentiments about their propensity to accept risk or engage in informal trust building behaviours into the future. At times the causes for reticence could be traced back to previous bad experiences where an untried and unknown project participant had failed to perform adequately; clients in particular were unwilling to repeat such actions, perhaps as a consequence of their past experiences.

Ongoing re-evaluation of trust levels in relationships was a continual theme across the interviews, with wariness and vigilance being frequently mentioned, perhaps as a consequence of the increased risk that trusting behaviour placed upon project participants. On the other hand, the risk-reward proposition was also clearly on display, with the hope that actions based upon good faith in the current project might result in favourable consideration for future projects. These actions would include benevolence, integrity and honesty, over and above the normal expectations of competence and reliability. Professionalism was also mentioned, though it was unclear as to whether only professionals would display this range of positive behaviours, or whether the term professionalism was used as shorthand for describing those behaviours.

Long-term, trust-based relationships were identified as beneficial when dealing with major conflicts. A history of successful collaborative working was cited as a significant contributor to overcoming problems – usually through informal measures – that might otherwise have resulted in litigation. This was usually couched in terms of "relationship management".
The initial intent of project stakeholders
The set of underlying assumptions, attitudes and consequent behaviours that a particular project participant – and more importantly, that participant's representative – brought to the initial project meetings were seen as fundamental to the formation of the project team culture (Munns, 1995). Different interviewees expressed contrasting positions during the early stages of project establishment, ranging from the strictly contractual through to the deeply collaborative. Interestingly, this was also reported as a generational issue, with younger interviewees espousing more collaborative intentions, and contrasting these with the intransigent "us versus them" mentality of their seniors.

Opinions differed as to the beneficial and detrimental impact of aggressive behaviour during the early stages of the project. Many participants felt that this approach would have a negative impact upon the conduct of the project, though a few of them reported a softening of stance into cooperation and collaboration once that project team had been initiated. Where negative influences originated from major clients, those charged with the management of the project often had to work hard to modify the project team culture into something more cooperative. Blatant exploitation however, was universally regarded to be a negative influence on project outcomes. As the outcomes of any project are influenced by the initial intent and expectations of the parties involved (Munns, 1995), a greater level of awareness amongst project practitioners in this regard would be valuable. Similarly, as a non-trusting intent will be detrimental to project success (Munns, 1995), an improved understanding regarding the influence of trust and its dimensions would likely help overcome the negative effects of preconceived attitudes and an adversarial culture. While a pre-emptive decision to trust in an exchange relationship is not without risk, the potential benefits of trust will be lost if an alternate non trusting attitude is adopted (Whitener et al., 1998).

Attribution Variables

Trustworthiness, reliability, communication and competence.
Levels of trustworthiness between project stakeholders was determined by attribution variables assigned to one another (Good, 1988). To this end, trustworthiness lay in the gift of those with whom they interacted- it could only be attributed to them by those who experienced it – and it commonly occurred only where mutually beneficial and collaborative approaches were married to clearly articulated common goals. Where this was expressed in
hard dollar contract terms, informal "partnering" approaches to solving contractual issues were employed by those who were in a position to do so, or deliberately chose this approach. Hence, the mere presence of a traditional procurement mechanism was not shown to be an insurmountable barrier to trust-based solutions, and the benefits of trustworthiness were subsequently acknowledged (McLain and Hackman, 1995, Gajendran et al., 2013).

Where the voluntary exposure of a party to increased risk through the employment of trusting behaviour was betrayed, the consequences for that relationship were negative and long term. There was widespread expectation of reciprocation, and where this was not forthcoming it could impact upon decision-making during future projects – to be more reticent about informal partnering – or even the selection of future projects themselves. By extension, other attributable characteristics were found to be similarly influential. The reliability of trading partners, in terms of their ability to communicate efficiently and effectively (Gajendran et al., 2013), as well as the competence with which they completed their work were all frequently mentioned, both as positive attributes to be sorting trading partners and as inhibitors to project performance where their absence in trading partners was evident. Moreover, some interviewees reflected unfavourably upon their own ability to perform in these regards, principally in relation to communication; this was particularly evident where internal business processes and ICT systems hindered the timely communication of documents, thereby reducing their capacity to collaborate. Paradoxically, the increased use of ICT to improve the efficiency of project team communications was observed to hinder face-to-face contact, and this was felt to inhibit the opportunity to build trust and solve problems informally through collaboration.

A track record of the capacity to deliver results was universally acknowledged as a key factor in winning work and becoming the object of trust. Reputation and record with supply chain customers was regarded as crucial to the long-term health of businesses; conversely poor performance and/or incompetence were believed to be extremely damaging to a firm's reputation.

**Benevolence, honesty, and integrity**

Characteristics of benevolence, honesty and integrity were identified in terms of attributional characteristics ascribed to trading partners, as well as in terms of characteristics displayed and self identified by the interviewees themselves.
A willingness to act with benevolence in the interest of others (Lamsa and Pucetaite, 2006) was a common characteristic amongst the majority of those interviewed. It typically took the form of "going the extra mile", and doing things that were not strictly contractual, but that would nevertheless result in better – and more trusting – relationships, in the pursuit of better project outcomes (Lamsa and Pucetaite, 2006). Those that demonstrated benevolence did so in spite of, rather than as a result of, the legitimate opportunities to exploit their trading partners using contractual levers available to them. Similarly, the exercise of benevolence was found to be instrumental in reducing the negative impacts of contractual conflicts; the search for a win-win outcome was held to be preferable over a transactional win in court, when considered in terms of overall project success.

The issue of integrity – adherence to a known set of principles underpinning behaviour – was raised by some interviewees: the presence of integrity in stakeholder relationships was taken as indicative of the trustworthiness of the party displaying it. Conversely, actions displaying a lack of integrity by a particular party would quickly undermine relationships, shaping future decisions and tainting attitudes towards that party. In one instance a "charter of agreed values" was appended to a traditional contract in an attempt to better align the personal attitudes and actions of trading partners with the desired project outcomes.

Only a small number of the interviewees demonstrated an overt understanding of honesty and its influence in terms of developing and maintaining stakeholder relationships, and the consequent improvements in project outcomes. To this end, given that honesty and dishonesty were only scarcely identified as triggers and barriers to better relationships, a wider understanding in this regard would be beneficial.

**Contextual Variables**

Risk, vulnerability, uncertainty and its control

The need for trust in the first place is not only contingent upon the existence of two parties in an unequal power relationship, but also on the existence of a context within which that power structure places one or the other of these parties in a situation of risk and vulnerability. A strong theme that recurred through many interviews was the idea that the pre-existence of a strong and strategic relationship between trading partners was a powerful mechanism for reducing the initial levels of such risk and vulnerability. This was particularly the case for
clients who would gauge the risk associated with alternative trading partners in terms of prior experience with repeat suppliers.

Contractual apportionment of risk, which was widely regarded as central to the nature of project outcomes (Schwalbe, 2004), could be dealt with to the satisfaction of all parties providing there were clear guidelines for its distribution from the outset. Conversely, where definitive risk apportionment and management was ambiguous, uncertainty prevailed, and trust diminished as a consequence. The presence of clear guidelines and definitive procedures for dealing with unforeseen risks were therefore considered to be significant. Traditional procurement mechanisms— even construct-only contracts – were not seen as detrimental to either parties interests so long as these mechanisms were in place from the outset. I.e. contractual remedies had to be appropriate, and appropriately implemented. However, no interviewee made any reference to trust itself as an appropriate risk/uncertainty mitigation technique (Wong et al., 2008). This silence may indicate that an increased level of trust within stakeholder relationships could be beneficial in terms of managing project risk. However, it also supports the idea that it is the appropriate management of risk, more so than the trust amongst stakeholders that is integral to the success of traditionally procured projects. Paradoxically then, the human element was seen as being of equal, and perhaps even greater significance to the likelihood of successful outcomes when dealing with unforeseen risk and uncertainty than the control mechanisms themselves. While the control mechanisms would provide the boundary within which project stakeholders interacted under conditions of uncertainty and risk, it was the attitudes and behaviours of the personalities involved that ultimately determined the success of any contractual arrangements. It was therefore widely felt that relationship-based negotiation was preferable to contract-based actions.

Ultimately, while the respective control mechanism in any project will influence stakeholder relationships and project outcomes, appropriate allocation and management of risk, along with the individual stakeholders involved will likely be of greater consequence.

**Team environment**

If the foregoing could be said to apply to individuals representing various stakeholders within the project team, the overall project team environment was also seen as being crucial to achieving successful project outcomes. Shared values, competent and timely communication, appropriate managerial leadership, and mutual respect were all recognised to contribute to a positive project team culture, leading to collaborative problem-solving when
unforeseen circumstances arose. However, the link between individual personalities and overall project team culture could not be ignored, and some interviewees blamed difficult projects which led to poor outcomes on a clash of personalities between key individuals. Ultimately, a positive team environment was considered vital for project success, however, while none the less implied in the parallel between a positive team environment and good stakeholder relationships, a greater recognition of the specific value of trust and its dimensions in this regard (Delisle, 2004) would be useful within a traditional procurement context.

**Trust, projects and project outcomes**

The interviewees demonstrated an implicit understanding regarding the influence of trust on cooperative processes (Kramer, 1999), and successful project outcomes (Pinto et al., 2008). However, this acknowledgment was overtly limited to other dimensions of trust rather than trust itself. Similarly, project characteristics pertaining to a limited timeframe (Hartman, 2002), as well as a general lack of opportunity for multiple interactions (Dervitsiotis, 2003), were not explicitly acknowledged in terms of trust and its influence (Atkinson et al., 2006). Project supply chains inherently necessitate trust building on an all too frequent basis. Hence it may be suggested that stakeholders view trust building as being too hard as a matter of routine, and that trusting/trusted relationships with strategic trading partners arise more by chance than by design or strategy.

**Trust Failure**

**Trust break down and repair**

The potential for negative events and a breakdown of trust within traditionally procured projects was universally acknowledged by the interviewees, with reduced project outcomes the result. However, in terms of repairing lost trust, while the interviewees acknowledged the benefits of strong relationships when resolving conflicts and responding to negative events, there was no demonstrated understanding of the intricacies of trust repair itself, or how the trust repair process differs from initial trust development (Kim et al., 2004). In this regard, there was little evidence that any of the interviewees had considered the possibility of actively repairing and rebuilding relationships with trusted trading partners in the event that they failed for some reason. This appeared to suggest that whilst trust was beneficial and
desirable it wasn't sufficiently valuable to invest time and effort in sustaining a trusted relationship through a rough patch.

Discussion
The results obtained from this interview-based study into the influence of trust upon project outcomes within traditionally procured projects have shown that whilst trust is not, and cannot be mandated through contractual instruments, those individuals forced to work within this context recognise its value. That is to say, project participants occupying positions within the top tiers of project teams routinely employ, and experience approaches to solving problems associated with risk and uncertainty that are trusting in nature. They and their counterparts appear to be willing to accept heightened levels of short-term risk and vulnerability (by trusting, and being trusted) in order to solve larger issues of contractual vulnerability, risk, and uncertainty.

Given that trust must necessarily occur at the level of individuals, whereas contracts apply to trading entities, it can be seen that for trust to occur there is a form of risk transfer: the individual negotiators assume much heightened personal, though informal, liability, in the hope that their actions will lead to mutually acceptable collaborative outcomes. In a personal sense, these individual risk takers are engaging in the search for unique solutions to unique problems (i.e. the sources and consequences of unforeseen contractual risks). On one level the solutions could be thought of as being innovative – novel ideas that might lead to advantageous outcomes, over and above normal expectations – and bring with them the risks associated with innovating (particularly failure).

Previous research into the attitudinal characteristics of decision-makers in the construction sector has revealed that whilst stakeholders consider and balance salient issues during their deliberations, their decisions are tempered by issues of personal risk – to ongoing employment, reputation, personal return on investment and so on. It is in the context of these personal risks that both trustors and trustees have to consider another innovation concept, namely affordable loss.

Innovative firms, and to a lesser extent innovative individuals, often balance their desire to seek extraordinary profit through innovation against the costs of doing so and the likelihood of its success. Like the prudent gambler, they will have a budget or stake money which they are prepared to lose. This affordable loss then dictates the point at which they are prepared to
cut their losses and walk away. The same is often true of corporate entities engaged in litigation over contractual disputes. However, when it comes to individual employees considering engaging in a trust-based relationship with a potential adversarial litigant in the hope of negotiating a mutually favourable outcome, an additional level of affordable loss is introduced. Any decision to trust brings with it a heightened risk of failure, and with it the potential for ridicule, loss of reputation, reduced employability, and so on. This is particularly the case for traditionally procured projects when no provision is made for negotiated variations or outcomes: the risk is wholly personal.

Ultimately, while individual stakeholders may recognise the benefits of trust and its dimensions, the perceived affordable loss may be deemed too great, and consequently dictate actions and behaviours which ignore the potential benefits forthcoming through a trusting response to risk. Or similarly, the "you first attitude" may apply, and individuals become reticent to accept the risk associated with a decision to trust, without first experiencing trust themselves. The potential benefits of trust in response to risk may therefore never be realised, with sub optimal project outcomes the result.

**Conclusion**

It was clear that trust issues frequently influenced the lived experiences of stakeholders within traditionally procured projects. Trust through its various dimensions was both an explicit and implicit influence on stakeholder relationships, transactions and eventual project performance. Trust issues were found to trigger both good and bad relationships. Yet despite its centrality, there was little evidence of proactive actions to develop and maintain trust within traditionally procured projects. A greater understanding of why this was the case would be beneficial.

Individual stakeholders were found to be a significant influence on project outcomes, with issues of trust fundamental in this regard. The past experiences and initial attitude of stakeholders were shown to be influential to project success. This indicated the importance of a) initiating actions to develop stakeholder trust during project initiation, and b) adopting a focused approach to trading partner selection on the basis of trust compatibility and consequent value delivery, rather than cost alone. Given that individual personalities within the project team were the triggers to (non)trust, characteristics of competence, honesty,
benevolence, and trustworthiness would be vital, along with a willingness for open communication and a cooperative approach to resolving issues when they arose.

Traditional procurement mechanisms are not inherently conducive to informal communication and problem-solving, yet personal traits espousing this approach were commonly acknowledged as desirable attributes, likely to contribute to project success. In spite of this, most stakeholders were not willing to expose themselves to the increased risk that came with informality, usually to the detriment of project outcomes. Mechanisms specifically designed to reduce contractual risk through informality would appear to offer the potential for considerable benefit.

The appropriate identification, allocation and management of risk within traditionally procured projects were also found to be vital. While there was some acknowledgement of the parallel between trust and risk, it was apparent that while increased levels of trust may help overcome risk, it is the allocation of the risk in the first instance that is of greater importance. This holds true in spite of the chosen procurement method, and has particular relevance to the design and implementation of traditional procurement mechanisms.

There was widespread awareness of the potential for negative events and a subsequent breakdown in trust within traditionally procured projects. There was also an apparent understanding of the value of strong relationships and trust when responding to negative events and resolving conflict. However, there was no evidence that project participants understood precursor triggers to poor relationships and distrust, which in turn led to poor project performance. Nor was there any awareness regarding the importance of, and mechanisms to repairing relationships once trust had been lost. This appears indicative of both an undervaluing of trust as a tool for project performance, and a comfort in retreating to traditional contractual remedies.

This study has illuminated the development and maintenance of trust within the lived experiences of construction practitioners operating in traditionally procured projects, while also highlighting the potential shortcomings of the traditional procurement mechanism. To this end, a greater understanding from stakeholders regarding trust and its dimensions would be advantageous, both in terms of procurement mechanism design, as well as practical application.
References


Appendix 1
Table 2: Condensed summary of interviewee quotations

<table>
<thead>
<tr>
<th>Thematic Trust Framework (Main Theme Codes)</th>
<th>Interviewee quotations (condensed summary)</th>
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<tbody>
<tr>
<td><strong>HUMAN VARIABLES</strong></td>
<td></td>
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<tr>
<td>Relationships, trust</td>
<td>“You can have a very successful project because individuals are prepared to work together to achieve an ultimate goal” (Consultant #11- Project manager/Quantity Surveyor)</td>
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<td>and the project environment</td>
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<td></td>
<td>“There have been projects that I have been involved in that have been disasters. Terrible, personal conflicts, very difficult clients” (Consultant #6- Architect)</td>
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<td></td>
<td>“it is all about trust” (Client #3: Senior project Manager)</td>
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<td></td>
<td>“the individuals involved and the trust that you have between them” (Contractor #1: Project Manager) &quot;Trust is obviously something that you need to develop and that's where interpersonal relationships become very important&quot; (Client #1: Contracts Manager)</td>
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<td></td>
<td>“The attitude of people is key” (Client #1: Contracts Manager)</td>
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<td></td>
<td>“In any contract, it comes down to having the right people for the task more than anything” (Client #2: Senior Project Manager)</td>
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<td></td>
<td>“It probably comes down to the character of the people (Contractor #3- Project Manager)</td>
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<td></td>
<td>“It often depends on personalities” (Consultant #8- Quantity Surveyor)</td>
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|                                            | are “very confrontational…and trying to see what they can get away
with” (Consultant #2- Project Manager). “Some contractors immediately seem to take a defensive role” (Consultant #8- Quantity Surveyor). When negative events did inevitably eventuate, there was common acknowledgment of the value of good relationships in achieving mutually acceptable resolutions. “We try to gel as a team and avoid disputes where ever possible” (Contractor #4- Project Manager). With good relationships established, “Your problem is my problem. My problem is your problem. How do we work together to resolve it” (Contractor #3- Project Manager). Strong relationships were also considered to provide a significant disincentive for exploitive behaviour, as well as help “overcome the pressures to be adversarial” (Client #3: Senior Project Manager).

work collectively “as a team” (Client #1: Contracts Manager)

“Every new project you have to build a new team. It is all new players. It is all new relationships” (Client #4- Project Manager)

“I initially try to foster working as a team” (Consultant #3- Architect).

“We are all a team. This has been emphasised from day one” (Contractor #3- Project Manager).

“trying to improve relationships internally” (Contractor #2: Project Engineer).

<table>
<thead>
<tr>
<th>Relationship interactions and trust</th>
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<tbody>
<tr>
<td>“There is a relationship there. It plays a big part” (Contractor #2: Project Engineer)</td>
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<td>“There are real benefits working with people who you know you are comfortable and confident working with” (Consultant #13- Engineer)</td>
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<tr>
<td>“We would like to work with them again. It is very important for us to maintain our relationship” (Contractor #3- Project Manager)</td>
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<tr>
<td>“9/10 people would be paranoid into the future that this would happen again” (Contractor #1” Project Manager)</td>
</tr>
<tr>
<td>“There were a few issues…so that left a bit of a sour taste in our mouth” (Contractor #5- Project Manager)</td>
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“I would be happy to work with you again” (Consultant #1: Project Manager)

“I tend to stay away from people who are difficult to work with interpersonally” (Client #1: Contracts Manager)

“If we do not achieve a successful outcome…I have no doubt that would be the last project we would work on for the client” (Consultant #11- Project manager/Quantity Surveyor)

“The client is a little bit wary of what happened in the past on projects” (Consultant #11- Project manager/Quantity Surveyor)

“There is a lot of loyalty and relationships have been built up” (Subcontractor #2- Internal partitions and linings)

“You get to know them. A lot of the work up here is done more on trust” (Contractor #5- Project Manager)

“You got your name recognised by doing a good job” (Consultant #8- Quantity Surveyor)

“If you do a good job, a good project, it might flow through to future work” (Consultant #5- Quantity Surveyor)

“If all parties are happy…potentially there is another project to walk into the next time around” (Subcontractor #1- Electrical Services)

“People need to be respected and treated well” (Client #1: Contracts Manager)

“If you can trust them, you can call them up at any time and ask them their opinion” (Consultant #4- Engineer)

“It is pretty much a collaborative approach. People working in isolation will not produce the best result” (Consultant #7- Engineer)

“A lot of it is to do with a bit of history” (Client #3: Senior Project Manager)

“There is not a period of getting to know you. You can start already
understanding the way things happen” (Consultant #12- Architect)
“Through previous dealings, we developed a reasonable relationship”
(Subcontractor #3- Elevator Services)
“Living together, working together” (Client #2: Senior Project Manager)
“You can have some big conflicts”
“It is all about managing those relationships” (Contractor #2: Project Engineer)

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<tr>
<th>The initial intent of project stakeholders</th>
<th>“Initially it was quite contractual” (Contractor #4- Project Manager)</th>
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<tr>
<td></td>
<td>”We have a culture of dealing very much in a collaborative way”</td>
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<td></td>
<td>(Consultant #7- Engineer)</td>
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<td></td>
<td>“With older generations…there is an us versus them mentality”</td>
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<td></td>
<td>(Consultant #1: Project Manager)</td>
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<td></td>
<td>“It could be a generational thing” (Client #3: Senior Project Manager)</td>
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<td></td>
<td>“It took us time to break down the us against them attitudes and try</td>
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<td>and get everybody working as one team. I think we are at the position</td>
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<td></td>
<td>now where everybody is working towards a common goal which is</td>
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<td></td>
<td>extremely important for the project” (Contractor #4- Project</td>
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<td></td>
<td>Manager)</td>
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<td></td>
<td>“When the contracts began…it was quite contractually aggressive. I</td>
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<td></td>
<td>have really tried to break that down” (Contractor #4- Project</td>
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<td></td>
<td>Manager)</td>
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| ATTRIBUTIONAL VARIABLES                  | “Even though it is the traditional hard dollar contract….you try and |
|                                          | help the contractor as much as you can”. "You partner your way     |
|                                          | through it….if there is an issue" (Client #2: Senior Project Manager) |
|                                          | “It was a true relationship based arrangement. I don’t think we ever |
|                                          | looked at the contract” (Client #4- Project Manager) |
| Reliable behaviour | “They are very quick to charge a variation and extremely slow to give any reduction. That is a real sore point and it gets to the point it is quite adversarial” (Consultant #6- Architect)  
“You are not going to be bidding for work” (Client #3: Senior Project Manager)  
“I would never get involved with another job like that” (Subcontractor #3- Elevator Services) |
|-------------------|-------------------------------------------------------------------------------------------------|
|                    | “We tend to have our preferred list of people we would rather work with, based on experience” (Consultant #7- Engineer)  
“We have a core group of each trade that we use almost exclusively” (Contractor #5- Project Manager)  
Relationships are negatively influenced by “unreliability” (Client #1: Contracts Manager) and “poor behaviour” (Client #3” Senior Project Manager)  
“You are not going to be bidding for (future) work” (Client # 3: Senior Project Manager) |
| Communication      | “I initially try to foster communication and working as a team” (Consultant #3- Architect)  
“There is no doubt that communication is the key” (Consultant #4- Engineer)  
“If there are issues, you have just got to bring them out in the open and discuss them” (Client #2: Senior Project Manager)  
“The project team must get together, and thrash any issues out” (Contractor #4- Project Manager)  
“If there is close communication, a lot of problems can be resolved before they actually become a problem. These are the kind of projects you want to work on” (Consultant #7- Engineer)  
“If we had a bit more freedom of information…a lot of the problems we have to face day after day would be alleviated” (Subcontractor #2- |
Internal partitions and linings

“Open communication is good” (Client #3: Senior Project Manager)

“We need to communicate very freely and openly” (Consultant #7-Engineer)

“Everyone is cooperating. Everyone is getting on well, getting answers back on questions very promptly” (Contractor #3- Project Manager)

“If there is no communication, a job will stop” (Contractor #2: Project Engineer)

“We have an almost interconnecting corridor….You can see them and you can go and sit down and talk to them” (Client #2: Senior Project Manager)

“My door is always open so it is always coming in and speaking about any issues” (Subcontractor #1- Electrical Services).

“Number one preference is to go and see the client face to face” (Consultant #1: Project Manager)

“Try to keep resolutions of issues as informal as possible….So talk before you write letters” (Client #1: Contracts Manager)

“I find the best way to resolve problems is to pick the phone up and talk to them” (Contractor #4- Project Manager)

“It is more important to be out there on site, physically talking to people. Sorting out problems in person” (Subcontractor #1- Electrical Services)

“I would rather discuss it as opposed to sending an email which can often be received abruptly” (Consultant #11- Project manager/Quantity Surveyor)

“There has been a fair amount of frustration. It is often difficult to interact (with this client) because they are fairly bureaucratic. It is often difficult to get answers” (Consultant #10- Client
<table>
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<tr>
<th>Competence</th>
<th>Benevolence</th>
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<tr>
<td>“We were not the cheapest by far, but they still gave us the job because they know we can deliver it” (Contractor #2: Project Engineer)</td>
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<td>“There was a reputation….Someone known for not delivering quality of work” (Contractor#2: Project Engineer)</td>
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<tr>
<td>”They would not be employing us if they did not think that we could get the job done” (Consultant #2- Project Manager)</td>
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<td>“can often influence the next job” (Consultant #10- Client Representative)</td>
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<tr>
<td>“You tend to just stay with them unless something goes wrong” (Contractor #2: Project Engineer)</td>
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<tr>
<td>“If you have done it, they will trust you and they will give you more work” (Contractor #2: Project Engineer)</td>
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<tr>
<td>”If you do not do a good job or do not do it right, then you are out of business tomorrow” (Subcontractor #3- Elevator Services)</td>
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<tr>
<td>“The courteous phone call to say we are going to do this and it is going to affect you is not required by me. But I will do it. It does build a good relationship” (Subcontractor #2- Internal partitions and linings)</td>
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<td>“We have internal quality assurance procedures here which in some way hinder collaboration in terms of transferring documents and so on” (Consultant #12- Architect)</td>
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<tr>
<td>“We do not sit down and talk and interface to the degree we use to. That interpersonal face to face stuff is not there” (Client #5- Project Manager)</td>
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<td>“best to be upfront and open” (Contractor #1: Project Manager)</td>
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<tr>
<td>“It is very hard to build up a level of trust” (Consultant #8- Quantity Surveyor)</td>
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<tr>
<td>“We were not the cheapest by far, but they still gave us the job because they know we can deliver it” (Contractor #2: Project Engineer)</td>
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<td>“There was a reputation….Someone known for not delivering quality of work” (Contractor#2: Project Engineer)</td>
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<td>”They would not be employing us if they did not think that we could get the job done” (Consultant #2- Project Manager)</td>
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<td>“can often influence the next job” (Consultant #10- Client Representative)</td>
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<tr>
<td>“You tend to just stay with them unless something goes wrong” (Contractor #2: Project Engineer)</td>
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<tr>
<td>“If you have done it, they will trust you and they will give you more work” (Contractor #2: Project Engineer)</td>
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<tr>
<td>”If you do not do a good job or do not do it right, then you are out of business tomorrow” (Subcontractor #3- Elevator Services)</td>
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<tr>
<td>“The courteous phone call to say we are going to do this and it is going to affect you is not required by me. But I will do it. It does build a good relationship” (Subcontractor #2- Internal partitions and linings)</td>
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<tr>
<td>Integrity</td>
<td>“He tabled these drawings. They were our drawings only re-badged. It was terrible” (Client #4: Project Manager)</td>
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<td></td>
<td>“Shared values” (Contractor #1: Project Manager) were considered instrumental, particularly during the initial stages of a relationship</td>
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<td>“a charter of agreed values” (Contractor #1: Project Manger) was drafted at the commencement of a contract, in an attempt to foster the right type of individual</td>
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<tr>
<td>Honesty</td>
<td>“Honesty is the most important thing” (Contractor #1: Project Manager)</td>
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<td></td>
<td>“dishonesty” (Client #1: Contracts Manager) negatively influences a relationship</td>
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<td></td>
<td>“honest” (Contractor #1: Project Manager) behaviour fosters trust</td>
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| Risk, vulnerability and uncertainty | “It is less risk giving it to us than having to bring in a new company, and establish that client relationship” (Contractor #2: Project Engineer)  
“We have been working with the client for so long anyway, so it was really ‘how can we assist you’. The relationship was already there” (Consultant #3- Architect)  
“We understand how they work. We understand where the risks are and try and manage our way through that process” (Consultant #3- Architect)  
“Sometimes in a hard dollar environment, if they are starting to not perform well and lose money it can become adversarial” (Client #3: Senior Project Manager)  
“The risk that the client’s are asking us to take on is getting greater and greater. It really is a concern” (Contractor #4- Project Manager)  
“If you do not get the principles and project requirements absolutely bullet proof you lose control” (Client #4- Project Manager)  
“We have eliminated the risk, even if it is construct-only” (Client #3: Senior Project Manager)  
“If you have got clear guidelines it is quite easy to give clear outputs” (Consultant #2- Project Manager)  
“try and reduce their own internal risks on a project from their own point of view” (Consultant #5- Quantity Surveyor)  
“As long as we have identified the risk and we have made allowances for it” we can avoid “adversarial”, and “contractual head bashing” (Client #3: Senior Project Manager)  
“we get what we want. It is just a much fairer way of doing it” (Client #3: Senior Project Manager) |
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<tr>
<td>Control mechanisms</td>
<td>“The contract itself can establish or disestablish a relationship” (Consultant #1: Project Manager)</td>
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</table>
“Even though it is construct-only you can identify where the risks are and assist in making it fair” (Client #3: Senior Project Manager)

“the personalities involved” (Contractor #1: Project Manager)

“People are always key, but the different styles of contract procurement can place certain pressures on the team that can put a lot more tension in relationships” (Client #1: Contracts Manager)

“In any contract it comes down to having the right people for the task more than anything” (Client #2: Senior Project Manager)

“There is a contractual process in place. It has to be there. It has to be used to manage risk. However, if you get that relationship going with the guys that matter you are fine” (Client #4- Project Manager)

“It was a true relationship based arrangement. I don’t think we ever looked at the contract” (Client #4- Project Manager)

“I find that you get far better outcomes if we are not just quoting contract clauses at each other all the time” (Contractor #4- Project Manager)

“It was a collaborative approach. I can not see any other way of doing it” (Consultant #6- Architect)

Project success relies on “the character of people” (Contractor #3- Project Manager) and the ”driving force of certain personalities” (Consultant #10- Client Representative)

A strictly contractual approach often lead to situations that were “very confrontational” (Consultant #2- Project Manager) and ”totally aggressive”( Consultant #5- Quantity Surveyor)

“We had a couple of issues that had to go through the dispute resolution process and that was a fairly painful process for everyone” (Contractor #4- Project Manager)

"The formal contract does not build trust. The building of trust and relationships, etc. etc. – it is all the informal process" (Client #3:
| Team environment | “common agreement” (Consultant #3- Architect) facilitates a positive team environment  
“If people are happy, people are productive” (Contractor #2: Project Engineer)  
“huge economic benefit as well” (Client #1: Contracts Manager)  
“good leadership and mentorship” will “develop a culture of willingness to discuss things and work things through” (Client #1: Contracts Manager)  
“It is very collaborative. This had been emphasised from day one. We are all a team. We are working as one to achieve the same goal” (Contractor #3- Project Manager)  
“There were some issues with change of personnel. That always throws a project out” (Consultant #10- Client Representative)  
“They were out of their comfort zone” (Consultant #3- Architect) when forced to work in an environment where a cooperative and team work approach was fostered  
“You have an unsuccessful project generally when individuals do not get along (Consultant #11- Project manager/Quantity Surveyor) |
| Trust and project outcomes | “Every project you have to build a new team. It is all new players. It is all new relationships” (Client #4- Project Manager) |
| Trust and the temporary nature of a project | "Every new project, you have to build a new team. It is all new players. It is all new relationships" (Client #4- Project Manager)  
"You are creating a new project in its own right. A new team, and a new set of relationships every time" (Client #4- Project Manager)  
"It goes back to this short term project. There are new relationships. So you have got to start all over again" (Client #4- Project Manager)  
"Because in a temporary thing you have got to do it fairly quickly and
you will probably be friendly by the end of the job" (Subcontractor #2- Internal partitions and linings)

"We need to do it from the start. Be cooperative at the beginning" (Subcontractor #2- Internal partitions and linings)

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<tr>
<th>TRUST FAILURE</th>
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<td>Trust breakdown</td>
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4.4 Publication number three

4.4.1 Statement of authorship and contribution of others

Publication details


The co-authors attest that their involvement in the production of this paper was limited to supervision of the candidate, confirmation of alignment of its contents with its stated aim and objectives, typographical/stylistic checking and advising the candidate that as to appropriate responses to reviewers comments.

Graham Brewer

Thayaparan Gajendran

Grant Webber, Assistant Dean Research Training, Faculty of Engineering and Built Environment.
4.4.2 Introduction

Publication number three is titled “Mechanisms of trust and trust repair in relational contracting: a multiple perspective investigation of alliance projects”, and was published in The Chartered Institute of Building (CIB) World Congress 2013.

Publication details are as follows:


4.4.3 Exhibit Three – Mechanisms of trust and trust repair in relational contracting: a multiple perspective investigation of alliance projects
MECHANISMS OF TRUST AND TRUST REPAIR IN RELATIONAL CONTRACTING: A MULTIPLE PERSPECTIVE INVESTIGATION OF ALLIANCE PROJECTS

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Abstract

The softer social skills are a key element in the project manager's toolkit, and developing a sense of trust across a project team can be a critical contributor to the project's outcome. This is particularly important where the form of commercial engagement is relational in nature. Alliance projects in construction underpinned by "pain-share/gain-share" principles bring this importance to the fore, and yet little research exists in this field. This research was designed to reveal the intricacies of trust formation and maintenance in such an environment. Initially the concept of trust was deconstructed, analysed and synthesised into a series of identifiable personal attributes, attitudes and behaviours. Thereafter a model of characteristics was developed in order to code and analyse a series of 10 detailed interviews with multiple representatives from 9 firms and the client organisation, the preliminary results of which are presented here. The research confirmed the relevance of trust dimensions, along with an absence of strategies for trust building, maintenance and repair within project management practice. With adversarial dispute resolution prevalent, greater attention to trust and its dimensions would be highly beneficial for Alliance Project practitioners. Specifically, careful attention to project team member selection, strategies for relationship formation and trust building, and open and honest communication should be the focus for stakeholder education in this regard. Furthermore, the skills and traits ascribed to individual stakeholders were considered critical to project success, and included excellent communication skills, technical competence, fairness, integrity, honesty and benevolence. The risks inherent within an alliance project were also considered significant, with the establishment of trust early in a project facilitating a shared purpose and collaborative approach to problem solving which enhanced project outcomes. When trust did break down, the pre-existence of strong
relationships was considered to be the main weapon against an adversarial based response, and there was little evidence of knowledge regarding methods of trust repair.

**Keywords: Alliance project, trust, trust repair, relationships**

**Introduction**

The use of alliance procurement for the delivery of major public infrastructure projects has become increasingly prevalent in recent years. An alliance arrangement is a distinct form of relationship contracting (Thomson, 1998), in which the respective stakeholders are brought together for a specific project. Abrahams and Cullen (1998, p. 31) define project alliances as:

“An agreement between entities which undertake to work cooperatively, on the basis of a sharing of project risk and reward, for the purpose of achieving agreed outcomes based on principles of good faith and trust and an open-book approach towards costs”.

The pain share/gain share arrangement in an alliance ensures mutual project goals remain the driving force for all parties. The agreement to operate on a no-dispute basis, which rejects litigation, is also fundamental, and while negative events and issues may still eventuate, it provides the understanding that resolutions should be reached collaboratively i.e. rejecting the adversarial approach synonymous with traditional procurement mechanisms. Given the absence of the strict control mechanisms that define traditional procurement contracts, together with the centrality stakeholder relationships, the influence of trust is a key component of project alliances.

Trust is considered to be a fundamental requirement for human interaction (Romahn and Hartman, 1999), and there is widespread agreement on the value of trust in human behaviour (Bigley and Pearce, 1998). For the purpose of this study, the definition of trust provided by Rosseau, Sitkin, Burt and Camerer (1998, p. 395) has been adopted;

“Trust is a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviour of another”.

It is important within the context of this research to view trust as a psychological state rather than a behaviour. Moreover it is different to a cooperative relationship, which can exist without the presence of trust: it follows that compliance as a behaviour does not imply the existence of trust (Brewer and Strahorn, 2012).
While Alliancing is not new in Australia, little research has been conducted in relation to trust in that context. This research illuminates the formation and maintenance of trust through the lived experiences of multiple practitioners within Alliance projects. A theoretical model of trust is developed to allow the analysis and coding of detailed interviews. These reveal the importance of project initiation, ongoing maintenance, and limitations to the appropriateness of the alliance approach.

**Literature Review**

Past research has resulted in varying definitions and models of trust, which have usually been developed within the specific construct of the discipline in which they are to be applied. Debate and ambiguity has ensued regarding unified definitions and models (Hartman, 1999, Mayer et al., 1995): the subjective nature of trust has also limited the possibilities for developing a universally applicable trust model (Becerra et al., 2001).

Focussing primarily within the discipline of management, this study has therefore aimed to identify aspects of trust that have general applicability within a project environment. A thematic review of existing models has facilitated the identification and exploration of common trust themes (Brewer and Strahorn, 2012), with the subsequent review of literature resulting in the theoretical model of trust, as included in table 1. A succinct examination of the respective main theme codes found to be relevant to the particular focus of this study is provided herein.

Table 1- Theoretical trust model, as extracted from literature; Adapted from Brewer and Strahorn (2012)

<table>
<thead>
<tr>
<th>Human variables</th>
<th>Attribution variables</th>
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<tbody>
<tr>
<td>Relationships, trust and the project environment</td>
<td>Trustworthiness</td>
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<td>Relationship interactions and trust</td>
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<td>The initial intent of project stakeholder</td>
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<td>Contextual variables</td>
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<td>Risk, vulnerability and uncertainty</td>
<td>Trust break down</td>
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<td>Control mechanisms</td>
<td>Trust repair</td>
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<td>A positive team environment</td>
<td>Trustworthiness factors and trust repair</td>
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<td>Trust and project success</td>
<td>Social explanations for negative events</td>
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<td>Trust and the temporary nature of a project</td>
<td>Apology or denial</td>
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<td>Trust and the unique nature of a project</td>
<td>Competency or integrity trust violations</td>
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<td>Trust and project management</td>
<td>Apology and internal or external attributions</td>
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<td>Reticence</td>
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**Human variables**

The human element of trust was prominent in the reviewed literature, with relationships central in this regard. A relationship is described as the condition in which one party is dependent on another party to realize its objectives (Sheppard and Sherman, 1998), and the presence of a relationship is a requisite condition required for the development of trust (Rosseau et al., 1998). The ongoing interactions within a relationship are a key determinant of trust (Mayer et al., 1995, Tomlinson and Mayer, 2009, Weiner, 1986), with time a defining feature in any relationship (Karlsen et al., 2008). Project success is also considered to be strongly influenced by the trusting relationships between stakeholders (Pinto et al., 2008), however, in order to fully realise the benefits of a trusting relationship, trust must be mutual (Romahn and Hartman, 1999).

When interacting within a relationship, positive or negative experiences provide the foundation upon which individuals form casual attributions towards one another, with such ascriptions considered along dimensions of causality, controllability and stability (Weiner, 1986). Outcomes from this dimensional analysis subsequently initiate future expectations and emotional responses (Tomlinson and Mayer, 2009), facilitating the updating of trust between the parties, and determining the propensity for risk taking in the future (Mayer et al., 1995).

Prior to any project specific relationship interaction, the initial intent and expectations of the parties involved are considered to be significant in terms of the ultimate success of a project. While a pre-emptive display of trustworthy behaviour in the preliminary stages of an
exchange relationship is not without risk, the potential benefits of trust may be lost if a non trusting intent is displayed from the outset (Whitener et al., 1998). Ultimately, an initial non trusting intent will be detrimental to project success (Munns, 1995).

As human interaction is founded on trust (Romahn and Hartman, 1999), an understanding of the variables pertinent in this regard is significant within the context of any project environment.

**Attribution variables**
The reviewed literature also had much to say regarding attribution variables as applied within the context of trust in the project environment. That is, variables which influence how individuals assign some quality or character to another person within the project team. Themes pertaining to trustworthiness and its constructs were particular prevalent in this regard. To be considered trustworthy, one party must demonstrate the willingness to act in the best interests of another party (McLain and Hackman, 1995), and to this end, the extent to which one party is more or less trusted will be determined by their characteristics and actions (Good, 1988). Important trust building mechanisms which are mutually related to a high degree (Lander et al., 2004) include reliable behaviour, communication (Karlsen et al., 2008), competence, benevolence, integrity, and honesty (McKnight and Chervany, 1995).

**Contextual variables**
Contextual variables were also found to significantly influence trust. Uncertainty and risk are inevitable in the project environment (Schwalbe, 2004), and it is trust that ultimately helps to overcome issues in this regard. To this end, trust and the resulting benefits can not come to pass without one party accepting a degree of risk, and within the project setting, an individual’s positive motivation towards the overall objectives of a project are also reinforced by the presence of trust (Wong et al., 2008).

The fulfilment of control mechanisms which control risk and protect stakeholder vulnerability has also been shown to activate trust in the project setting (Wong et al., 2008), however, it should be noted that excessive control mechanisms can be counterproductive to the development of trust, and potentially lead to distrust among project partners (Pinto et al., 2008). As the enactment of any control mechanism bears a cost to the project bottom line, the influence of trust is also significant in reducing the need for control, by fostering stakeholder
relationships whereby individuals are able to interact without concern of exploitation (Aubert and Kelsey, 2000).

Trust has also been shown to be crucial to maintaining a positive team environment (Delisle, 2004), and similarly, a healthy team environment will have a positive influence on all themes and dimensions of trust. Ultimately, trust is vital for facilitating cooperative processes (Kramer, 1999), and through improving relationships, trust has a strong influence on project success (Pinto et al., 2008).

Trust failure
While the themes of trust are ideally applicable to stakeholder interactions, the practical ramifications of the real world project setting are such that the potential for trust breakdown is ever real, with the need to repair lost trust consequently also significant. Relationships between respective parties within a project team will be impacted by a negative event and the subsequent break down of trust can have significant consequences (Lewicki and Bunker, 1996, Robinson, 1996), leading to reduced trust and the need for trust repair (Kim et al., 2004). The perceived reason for a negative outcome will influence trust differently (Lewicki and Bunker, 1996, Sitkin and Roth, 1993), with factors considered according to internal, controllable or stable ascriptions afforded to the trustee (Tomlinson and Mayer, 2009, Weiner, 2001), with stability considered to be the most influential (Weiner, 2001). In terms of trust repair, despite efforts by the mistrusted party to demonstrate trustworthiness, low levels of trust can be reinforced by the significant information pertaining to the violation which remains (Slovic, 1993), and trust repair must not only restore positive expectations in a relationship, but also overcome negative expectations. The trust repair process therefore differs from initial trust development (Kim et al., 2004).

Methodology
Through adoption of the ‘constructivist’ theory to consider the diverse real world perceptions (Cresswell and Plano Clark, 2007) of multiple industry stakeholders, this research aims to analyse the divergent perspectives and lived experiences of alliance construction practitioners within the construct of trust and its influence. Semi structured, in depth interviews were used to collect the data. Nine individual stakeholders from different sectors were interviewed, including three clients, two client consultant project managers, three contractors, and one engineering consultant. Each interview was conducted at a location chosen by the participant
and was approximately one hour in duration. The questions aimed to firstly clarify the roles of the respective interviewees, and then targeted attitudes pertaining to stakeholder relationships generally, and then more specifically with consideration to alternative procurement methods. Subsequently, the interview data underwent a thematic analysis process to identify and abstract the main trust themes included in the developed theoretical model of trust as extracted from literature. The preliminary findings are presented herein.

Results and discussion
The evaluation of emerging concepts relative to extant literature is important to the development of new theory (Eisenhardt, 1989). Analysing the interview transcripts with reference to the main theme codes enabled the identification of trust-related issues, highlighting agreement or divergence from existing literature.

Human variables
Within the alliance environment, the importance of stakeholder relationships to project success was universally recognised by the interviewees. An understanding of factors pertinent to developing relationships was apparent, with communication, regular meetings, interaction outside the work environment, time, past exchanges, multiple interactions, team building, mutual trust, integrity, honesty, and the sharing of common goals, considered to be significant. Trust itself was also acknowledged, and in order to build stakeholder relationships, “you have to be able to develop trust” (Client #1: Director). However, providing the project objectives were being satisfied, the development of relationships and trust appeared to be an expected consequence of regular project processes, not requiring any defined trust-building strategy. Furthermore, while the importance of stakeholder relationships was readily apparent, the influence of trust was in some instances implicit only. As trust facilitates cooperative relationships (Misztal, 1996), and trusting relationships foster project success (Pinto et al., 2008), an understanding of the need to actively pursue the development of both relationships and trust within the alliance environment would prove beneficial.

The Alliance environment was considered to be conducive to strong relationships; however, poor relationships did still eventuate, particularly following negative events which result in relationships becoming adversarial. In instances of conflict, strong relationships among the alliance team were considered fundamental to resolving disputes and arriving at mutually
acceptable outcomes. Nonetheless, the presence of strong relationships within an Alliance was not considered to provide an absolute guarantee of project success.

The people themselves were considered to be significant to how relationships developed within an Alliance arrangement, with the personalities and individual attitudes involved considered critical in terms of project success or failure. “It's all about people, individual people, and the relationships they build” (Client Consultant #2: Senior Project Manager).

“Things succeed or fail on the personalities involved” (Contractor #1: Estimating Manager). Attention must therefore be given to the appropriate selection of individual project stakeholders during the formation stage of any Alliance.

In terms of relationship interactions and trust, the interviewees highlighted how future actions and behaviours were driven by past experiences: “we’re all products of our experience” (Client Consultant #2: Senior Project Manager). Negative outcomes were considered to be a key catalyst for future decision making, and hence, the exchanges between stakeholders were considered to be of particular relevance when things went wrong. Relationship interactions were shown to influence trust positively and negatively, with future risk taking decisions affected accordingly. Interviewees particularly valued displays of engagement, ongoing interaction, informal communications, collaboration and actions that confirmed integrity, honesty, and competence. Stakeholder interactions were also shown to facilitate a shared understanding of project objectives, improve previously poor relationships, and reverse instances of distrust.

The initial intent of project stakeholders was considered to be significant in terms of project success. Past experiences mould preconceived intentions, and drive the future actions which underpin project relationships. Even in an alliance environment conducive to the development of good relationships, “you can’t teach an old dog new tricks” (Client Consultant #1: Senior Project Manager), and an adversarial environment can eventuate. Consequently, an initial non trusting intent, and/or a failure to invest in the initial development of relationships is likely to result in adversarial exchanges, increased costs, and diminished project outcomes.

**Attribution variables**

Attribution variables essentially determine the level to which the respective parties deem each other to be trustworthy. Positive interactions and outcomes, common goals, time, and acting
in the best interest of others, were all considered to be pertinent factors in the development and display of trustworthiness. By displaying trustworthy behaviour, exchange partners are able to interact with confidence, and “build a level of commercial trust” (Client Consultant #1: Senior Project Manager).

Reliable behaviour in which an individual substantiates through action, what (s)he has articulated with words (Karlsen et al., 2008), was identified as being important in building relationships and trust amongst project stakeholders. Similarly, non-reliable behaviour was also found to result in a break down of trust and deterioration in relationships (Ho and Weigelt, 2002).

Communication aimed at developing and maintaining relationships was universally acknowledged, with the link between communication and trust also implicit. Central was the need for well-timed, correct and appropriate information transfer between stakeholders (Braendshoi, 2001), along with the recognition that the quality of the communication within the project environment is a critical determinant of project success (Packendorff, 1995). Openness, transparency, straightforwardness, frequency, and stakeholder dialogue and collaboration, were considered valuable. While formal communication methods were considered necessary, the benefits of informal communication in which stakeholders interacted on a face to face basis were emphasised. Better outcomes were reportedly achieved through person to person communication that facilitated a mutual understanding (Lander, et al., 2004).

The alliance environment was considered to encourage open communication between stakeholders. However, the absence of rules that explicitly dictated communication protocols meant that relationships and trust between stakeholders became increasingly critical. The role of effective communication in responding to negative events and resolving conflict was clearly acknowledged. A lack of communication with secretive and non transparent behaviour was shown to negatively influence project relationships and trust, and subsequently contribute to poor project outcomes, or even failure of the alliance arrangement. (Aubert and Kelsey, 2000).

While the benefits of communication in developing relationships and trust were highlighted, the converse link between trust and communication was not. As trust can facilitate the exchange of information which is vital for effective and efficient communication (Aubert and
Kelsey, 2000), increased efforts in the development of trust would be beneficial, as would an understanding that communication is the essence of trust building (Lander et al., 2004).

Competence is a significant determinant of trust (Karlsen et al., 2008, Lander et al., 2004), and the ability of respective team members is an essential element of trustworthiness (Butler, 1991, Gabarro, 1978, Sitkin and Roth, 1993). Many of the interviewees acknowledged the importance of competence to the creation of trust within the alliance environment. The importance of competence when selecting alliance partners was strongly apparent. Any display of incompetence or poor performance was therefore considered to provide a strong negative influence on relationships and future interactions between stakeholders.

Benevolence is expressed as one party’s belief that another party will act empathetically, and is considered a common attribute of trust (Lamsa and Pucetaite, 2006). The mutual goals inherent within an alliance arrangement were commonly identified by the interviewers as been significant in terms of encouraging benevolent behaviour, and developing and maintaining relationships between project partners. The common alliance goals were shown to allow interactions to proceed with confidence, with the link between trust and benevolent behaviour subsequently implied. Conversely a lack of benevolence reportedly resulted in adversarial interactions, poor relationships and lost trust, and ultimately a deterioration and failure of the alliance arrangement.

Integrity concerns the trustor’s perception that the trustee will remain true to a set of principles which are acceptable to the trustor, with a degree of dependability towards the trustee subsequently implied (Mayer et al., 1995). The importance of integrity to stakeholder relationships and project success was recognised by the interviewees. When collaborating within the alliance environment, a lack of integrity ultimately led to a break down in relationships, and a deterioration of the alliance arrangement.

The influence of honesty, a personal characteristic related to credibility that implies there will be no attempt to deceive (Munns, 1995), was similarly acknowledged. The interviewees highlighted the significance of “acting honestly and fairly” (Contractor #1: Estimating Manager), in building trust, developing and maintaining relationships, overcoming negative events, and achieving successful project outcomes within the alliance framework. A display of honesty from the outset of the project was considered to be of particular importance, with the damaging affects of dishonest behaviour also recognised.
**Contextual variables**
The issues of risk, and risk management, were commonly raised by the interviewees as being significant factors. It was accepted that a high risk profile is the key determinant for forming an alliance. The respective risk apportionment provided the framework for stakeholder relationships and interactions, and also drove future behaviour. When compared with traditional procurement alternatives, the interviewees believed that project risk was generally better managed in the alliance environment due to the common goals of stakeholders, which encourage good relationships: consequently trust was developed and maintained. Scenarios were also provided where the risk apportionment was shown to be a negative influence, leading to a “level of resentment” (Client Consultant #1: Senior Project Manager), and in some cases a failure of stakeholder relationships. Overall, the benefits of trusting relationships in managing risks were recognised, with the relationships and trust fostered within an alliance increasing the sense of common purpose and shared goals, and assisting the achievement of project objectives.

When considering control mechanisms and trust the alliance environment was found to be conducive to developing trusting relationships, removing the fear of litigation and motivating the resolution of disputes in a collaborative way. Nevertheless strong stakeholder relationships and trust were not guaranteed. The potential for conflict remained ever present, with issues of transparency, performance, a lack of urgency, excessive controls, value for money, and the pursuit of individual interests identified as issues that could strike at the core of trust between alliance partners. Ultimately, it was acknowledged that irrespective of the chosen control mechanism, “if there is not a human connection... It won't work anyway” (Client #3: Project Manager).

Maintaining a positive team culture was commonly believed to be important in terms of relationships and project success. A fully committed positive attitude held by all, combined with team building and collaborative problem-solving led by key stakeholders, was considered to be significant in this regard. “*When people cooperate, it generates a whole series of unrecorded costs and unrecorded benefits*” (Client Consultant #2: Senior Project Manager).

**Trust failure**
The influence of negative events on relationships and trust was universally recognised by the interviewees, with the break down of trust between project stakeholders shown to result in
poor project outcomes and even a complete failure of the alliance arrangement. In this regard, a lack of transparency, poor performance, behaviour that lacked integrity and honesty, adversarial conflict resolution, unreliable behaviour, lopsided risk apportionment, and issues pertaining to time, cost and quality, were all considered to be significant factors in terms of damaging relationships, and resulting in a reduced level of trust.

The interviewees clearly identified the link between negative events and lost trust, however remained silent on the divergent influences on trustworthiness of the perceived reason for the negative outcome: i.e. The extent to which the cause is deemed internal, controllable and stable to the trustee (Tomlinson and Mayer, 2009, Weiner, 2001). The stability dimension is considered to be the most important (Weiner, 2001). To this end, the interviewees failed to consider the damaging affects on relationships and project success of negative outcomes that are ascribed to typical and context specific behaviour, where it is perceived that given similar circumstances, the same results are likely in the future (Sitkin and Roth, 1993).

In terms of repairing lost trust between project stakeholders, the interviewees commonly expressed the belief that strong relationships provided the foundation for resolving conflict and overcoming negative events. Responding promptly and openly was considered to be important, as was communication, particularly personal communication delivered face to face. However, the interviewees failed to acknowledge the need to not only restore positive expectations in a relationship, but also overcome negative expectations (Kim et al., 2004). Nor was any consideration given to addressing the negative perceptions lingering after a negative event, and the need to reverse the low levels of trust which would thus be reinforced (Slovic, 1993). In this regard, an understanding by construction practitioners of how the trust repair process differs from initial trust development (Kim et al., 2004) is likely to facilitate a better response to negative events, in turn strengthening stakeholder relationships and improving project outcomes.

Conclusion
It was evident that whilst stakeholders in Alliance projects routinely encountered situations where issues of trust formed part of their lived experience, strategies for trust building, maintenance and repair did not form part of their project management practice. Repeatedly they alluded to situations that illustrated the centrality of trust-related issues, and implicitly the desirability for more effective approaches to combat negative outcomes in these
situations. However, more often than not, the default position remained founded on adversarial dispute resolution, despite the explicit acknowledgement that alternatives were likely to result in better project outcomes.

Accordingly it was concluded that greater familiarity and comfort with trust concepts in general, and sensitisation to the importance of trust formation, maintenance and repair strategies could be highly beneficial for Alliance Project practitioners. Specific issues in this regard include: the potential for personality profiling during project team member selection; relationship formation and trust building strategies for team leaders during the project team's establishment phase; transparency and honesty in project team communications.

Any project team that was to be constructed with care would need to be complemented by the skills and traits ascribed to individual stakeholders. To this end, excellent communication skills, technical competence, fairness, integrity and benevolence, as well as transparent honesty were all identified as critical elements of project success.

Within the specific context of alliance projects, it was acknowledged that issues pertaining to risk identification, quantification and apportionment were inherently challenging, and had the potential to penalise parties unfairly where underhand or simply murky decision making and risk apportionment was evident, particularly in the early stages of the project. Conversely, where trust was established initially, shared purpose and collaborative approaches to problem solving tended to follow, facilitating enhanced project outcomes.

Where trust did breakdown, familiar behaviours based upon adversarial dispute resolution was often the habitual response. The most effective weapon against this type of behaviour was found to be the pre-existence of strong relationships between key stakeholder players. Besides this, there was little evidence of knowledge of trust repair techniques.

The outcomes from this study have therefore examined and explained the formation and maintenance of trust in the lived experiences of construction practitioners within alliance projects. With consideration to the mostly implicit recognition of trust and its dimensions, education of project managers in this regard is warranted, and could realise improvements to current practice. Given that the data source for this study investigates trust as a general factor of alliance stakeholder relationships, a more focused study is also recommended, and would provide further illumination of the influence of trust, and provide greater direction in terms of future project manager edification.
References


4.5 Publication number four

4.5.1 Statement of authorship and contribution of others

Publication details


The co-authors attest that their involvement in the production of this paper was limited to supervision of the candidate, confirmation of alignment of its contents with its stated aim and objectives, typographical/stylistic checking and advising the candidate that as to appropriate responses to reviewers comments.

Graham Brewer

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Grant Webber, Assistant Dean Research Training, Faculty of Engineering and Built Environment.
4.5.2 Introduction
Publication number four is titled “Experiences of trust in construction project management: The influence of procurement mechanisms”, and was published in Proceedings of 30th Annual ARCOM Conference, Association of Researchers in Construction Management.

Publication details are as follows:

4.5.3 Exhibit Four – Experiences of trust in construction project management: the influence of procurement mechanisms
EXPERIENCES OF TRUST IN CONSTRUCTION PROJECT MANAGEMENT: THE INFLUENCE OF PROCUREMENT MECHANISMS

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Trust is a key element in the project manager's toolkit, and fostering trust in a project team is often critical to the project's outcome. Literature suggests that relational procurement mechanisms underpinned by "pain-share/gain-share" principles ought to increase levels of trust between project participants as compared to traditionally procured projects, yet little related research exists. Using "trust as a phenomenon" as the philosophical point of departure the intricacies of trust formation and maintenance are explored in these contexts. A framework of trust-related personal attributes, attitudes and behaviours is used to analyse a series of 15 detailed interviews with multiple representatives from construction and client organisations. Preliminary findings identify: participants’ desire for trust in projects; widespread absence of strategies for trust building, maintenance and repair; adversarial dispute resolution as the default; poor project team member selection. Widely valued traits in trading partners include open and honest communication; technical competence; fairness; integrity; honesty, and; benevolence. Where disputation has occurred trust repair skills appear to be rare. Positive pre-existing relationships are reported as the antidote for many project ills. Differences in the perception of trust variables associated with procurement context are identified: superficially surprising and counter-intuitive, they reveal pan-procurement principles for trust-based project success.

Keywords: relational procurement, transactional procurement, trust, trust repair.

Introduction
Trust is considered to be a fundamental requirement for human interaction (Romahn & Hartman 1999), and there is widespread agreement on the value of trust in human behaviour (Bigley & Pearce 1998). When contextualised in a construction project setting issues of risk, vulnerability, and trustors' expectations (or not) of fair treatment by trustees are central to the application of the concept.

In this context trust is primarily a psychological state rather than a behaviour. Moreover it is different to a cooperative relationship, which can exist without the presence of trust: it follows that compliance as a behaviour does not imply the existence of trust (Brewer & Strahorn 2012).

This research illuminates the formation and maintenance of trust through the lived experiences of multiple practitioners across various projects procured using both transactional and relational methods.
Literature Review

Transactional based procurement

Transactional based procurement has traditionally been utilised within the construction industry. Under this procurement method, traditional construction contracts aim to definitively allocate risk to stakeholders despite it being fundamentally impossible to foresee or quantify all potential risks and uncertainties (Macneil 1978). It is apparent that the construction industry operates within a challenging environment; consequently the capacity to contend with change appropriately manage and allocate risk is considered critical (Sakal 2005). In this regard transactional based frameworks are somewhat limited, particularly when dealing with high risk and complex construction projects (Campbell 2004). Effective risk management under transactional based procurement is therefore compromised.

The shortcomings of a transactional-based contract have been widely acknowledged. The respective parties are contractually encouraged to protect their own individual priorities, which often result in disputes, as well as outcomes inconsistent with the overall interests of a project (Chan et al. 2006). Adversarial relationships frequently develop (Chen and Chen 2007), and can be ascribed to the competitive fixed price context (Pesamaa, Eriksson, and Hair 2009). Responsible tendering can also be discouraged as a result of onerous contract conditions. To this end, there exists the potential for opportunistic parties to enter agreements with conniving intentions, particularly in relation to tender price, expected variations (Rahman and Kumaraswamy 2004), and exploitation of errors or omissions in the contract documentation (Mosey 2003).

In light of these shortcomings project outcomes under transactional-based procurement have been found to be negatively impacted, including: conflict and distrust (Sakal 2005), disputes (Pesamaa, Eriksson, and Hair 2009), reduced productivity (Ng et al. 2002), and cost overruns and project delays (Chan, Chan, and Ho 2003). A preference for litigation (Yiu and Cheung 2007) and disagreement rather than cooperation (Wood and McDermott 2001) are frequently the result.

The need for alternative procurement mechanisms has therefore been widely acknowledged by literature (Rahman and Kumaraswamy 2004). While the transactional-based approach aims to definitively identify uncertainties in a project, in doing so it fails to contractually acknowledge or facilitate the cooperative relationships which are vital to the success of a
contractual arrangement in terms of responding to issues when they eventuate (McInnis 2003). The human element influencing the outcomes of a project procured under a traditional framework is therefore significant.

**Relational contracting procurement**

Relational contracting (RC) was developed in response to the identified shortcomings of the conventional transactional based procurement approach, and the adversarial culture that was often common place within the construction industry (Goddard 1997). Rahman and Kumaraswamy (2004: 148) described RC as follows:

“Relational contracting is based on recognition of mutual benefits and win-win scenarios through more cooperative relationships between the parties”.

Essentially, and as applied within the construction industry, the principles of RC aim to encourage collaboration (Rahman and Kumaraswamy 2004), appropriately allocate and manage risk (Jones 2000), and foster benevolent contractual relationships which negate the transactional barriers to team building (Macneil 1980). Through a recognition of mutual benefits, stakeholders within a relational contract move past a reliance on purely legal terms, and function instead dynamically within a contractual, economic and behavioural framework (Macaulay 1963). As complex construction projects inherently result in an ever evolving contractual landscape, the relationships between parties are critical, and RC provides the context within which said relationships can be developed and maintained in a manner typically difficult in traditional transaction based procurement (Rahman and Kumaraswamy 2004).

The concept of collaboration is particularly pertinent in terms of the fundamental principles of RC and the overarching desire to reduce conflicts (Rowlinson and Cheung 2005). In this regard the benefits of collaboration within the construction industry are widely recognised (Gajendran and Brewer 2012). Given the significance of collaboration within the RC context, the question of how to foster a collaborative environment is logically pertinent. To this end, precursor dimensions for collaboration identified by literature include mutual objectives and actions, individual competence, and distribution of authority. Communication and trust are also identified (Gajendran and Brewer 2012), and these dimensions are especially relevant to the scope of this research.
The ultimate benefits of RC have been extensively acknowledged (Jones 2000; Macneil 1980; Rahman and Kumaraswamy 2004) and with consideration to the fundamental principle of reducing conflict, the re-occurring themes pertaining to relationships, team work, collaboration, communication, culture, and risk management are considered particularly significant within the context of this research. Furthermore, the importance of trust between parties (Rahman, Kumaraswamy, and Ling 2007), trust and trust based relationships (Rahman and Kumaraswamy 2008), and mutual trust (Chan et al. 2006) are also significant.

It should be noted that there remains some criticism that literature professing the benefits of RC fails to adequately consider its limitations, nor the poor examples that have at times eventuated (Bresnen 2007). However, these criticisms have not attempted to contest the potential advantages. Similarly, when considering the definitive advantages of RC, the qualification is often given that they are conditional depending on application and context, and that there is never a universally applicable solution (Bresnen 2007).

Within the Australian construction industry, Alliancing is a form of RC that is becoming increasingly popular. An alliance arrangement is described as a long term strategy between client, contractor and supply chain (Rowlinson and Cheung 2004) whereby risks and rewards are shared, and common goals are established in the pursuit of a particular outcome or project (Peters, Walker, and Hampson 2001).

Factors considered pertinent for successful Alliancing align closely with RC fundamentals; trust, collaboration, open and honest communication, cooperation, relationships and relationship management, joint problem and conflict resolution, team selection, goal alignment, team work, a win-win philosophy, and total organisational buy in (Peters, Walker, and Hampson 2001; Rowlinson and Cheung 2004). The influence of trust and other dimensions of trust are widely acknowledged in this regard, and are categorised within the “soft” elements that are said to form one part of an alliance arrangement (Yeung, Chan, and Chan 2007). These “soft” elements are of particular significance within the context of this research.

The second part of an alliance arrangement concerns the “hard” contractual elements relating directly to legal positions (Yeung et al. 2007). So despite the collaborative approach that is fundamentally at the heart of any alliance and the identified “soft” elements, the rights and obligations of the contracting parties are nonetheless still spelt out in strictly legal terms. The hard contractual elements define the collective sharing of risk, through the pain-share, gain
share agreement which adopts a best for project approach (Sakal 2005). A “no dispute” clause is also often included in which the contracting parties wave their rights to litigation (except in instances of wilful default), with this arrangement further fostering the fundamental themes of trust and goal alignment (Rowlinson et al. 2006). However, it should be noted that a no blame culture or contract cannot exist without a clear relational vision and a positive approach to relationship management (Rowlinson et al. 2006). This further highlights the importance of the softer elements in an Alliance arrangement. In this regard, the terms that define an alliance contract appear to exclude or certainly ignore the softer interpersonal aspects of relationships, of which trust – a response to risk exposure – is key.

**Trust**

Trust is an essential requirement which makes initial human interaction possible (Romahn and Hartman 1999: 233), and there is a wide spread acknowledgement on the value of trust in human behaviour (Bigley and Pearce 1998). Within the context of the management discipline, literature has provided various characteristics of trust and its constructs which have general applicability to a project environment. In this regard, an applicable framework of trust themes can be considered along contextual, human and attribution variables, with factors of trust failure also significant (Brewer and Strahorn 2012; Strahorn, Thayaparan, and Brewer 2013).

With consideration to the risk management function of any procurement mechanism, the contextual variables of risk, vulnerability and uncertainty are significant in terms of trust and its influence. Risk is inexorably present in every project setting (Schwalbe 2004), and any attempt to prevail against issues in this regard are critically dependant on trust its dimensions. Trust facilitates an individual’s positive motivation towards universal project objectives (Wong, et al., 2008), and the benefits of trust cannot come to fruition without one party’s willingness to accept some degree of risk (Romahn and Hartman 1999). Ultimately, trust helps to overcome risk and uncertainty.

As project outcomes are essentially reliant on people to get things done (Lechler 1998), it stands to reason that the human variables influencing any project are significant. In this regard, the ongoing interactions within stakeholder relationships are considered to be a key determinant of trust (Tomlinson and Mayer 2009). Consequently, attribution variables in which character traits are assigned amongst stakeholders are also a key determinant of stakeholder relationships and trust. To this end, dimensions of trustworthiness are notable
(Good 1988), along with mutually related trust building mechanisms (Lander et al. 2004); reliable behaviour, communication (Karlsen, Graee, and Massaoud 2008), competence, benevolence, integrity, and honesty (McKnight and Chervany 1995).

Methodology
With consideration to the identified relevance of trust in both transactional and relational procurement, and also the variables at play in the differing contexts each mechanism presents, the design of this research aims to consider theoretical trust themes against the ‘lived experience’ of practitioners in both procurement environments.

In investigating the lived experiences of construction practitioners, the human, technical and socio-technical dimensions need to be considered.

The human dimension is logically significant in terms of trust and the dimensions of trust which are central to this research, while the technical dimension includes the respective legal frameworks which underpin the alternate procurement methods. The socio-technical dimension is essentially concerned with the interaction between the human and technical dimensions, and is influenced by the project context.

This research has therefore adopted a phenomenological investigation of both trustors and trustees within a construction industry context. The exploratory nature of the topic and phenomenological stance adopted dictates the suitability of a qualitative and descriptive investigation. This aims to accurately conceptualise and explain meaningful trust-related themes exposed through lived experiences of practitioners (Wertz 2006). This research has investigated the consciousness of project stakeholders and the observable phenomena regarding the influence of trust; specifically in terms of what and how it is experienced (Moustakas 1994). Ultimately, this research is intended to illuminate the ontology of trust and its influence within a construction management framework.

When considering implementing a phenomenological research approach, a number of methodological considerations must be taken into account: firstly, prior knowledge must be bracketed and judgement suspended, until confirmed by findings and founded on an objective basis respectively; secondly, consciousness is always directed towards an object, but reality is inevitably linked to an individual’s consciousness of that object, therefore; lastly, reality of any object is only perceived within the context of the individual’s experience (Stewart and Mickunas 1990).
Informed by the foregoing, the procedural approach proposed by Moustakas (1994) for phenomenological research has been adopted. An investigation by way of in-depth interviews with multiple stakeholders within transactional and relational procurement contexts has been undertaken. Fifteen individual stakeholders from different sectors were interviewed, including five each of clients, project managers and contractors. Participant selection and recruitment was dictated by pragmatism: they were working on major projects within the Hunter region of NSW; each was experienced (5+ years of responsibility in their role); all had experience of both traditional and relational contracting.

Interviewees were asked about their background and the current context within which they were involved. Their familiarity with, and experiences of projects let under traditional and relational procurement mechanisms were then probed. Specifically the influence of trust (e.g. Bigley and Pearce 1998), trust failure, and its subsequent repair were explored in relation to: pre-existing relationships (Tomlinson and Mayer 2009); project initiation; supply chain relationships (Lander et al. 2004), project success/outcomes (Karlsen, Graee, and Massaoud 2008), and; strategic relationships (Tomlinson and Mayer 2009).

Analysis of the interview transcripts was then undertaken using an inductive thematic process. This allowed identification, abstraction and synthesis of context-specific trust-related concepts.

Results and implications

Trust

In both procurement contexts, the interviewees demonstrated an understanding of trust related issues within their lived experiences. There was wide spread acknowledgement of many dimensions of trust and the subsequent influence on project outcomes, relationships and relationship interactions. “You have to be able to develop trust” (Int. # 2- Client), in order to build stakeholder relationships, and relationships are dependent on “the individuals involved and the trust that you have between them” (Int. # 5- Contractor). "Trust is obviously something that you need to develop and that's where interpersonal relationships become very important" (Int. # 7- Client). Both good and bad relationships were evident, and themes of trust were central in this regard. "When people cooperate, it generates a whole series of unrecorded benefits” (Int. # 10- Project Manager). “It is all about trust” (Int. # 13- Project Manager). Relationships founded on past experiences were also considered to be significant
in terms of stakeholder interactions and project outcomes. “There is a relationship there. It plays a big part” (Int. # 8- Contractor).

Despite an understanding that strong relationships provided a significant disincentive for exploitive behaviour and help “overcome the pressures to be adversarial” (Int. # 13- Project Manager), there existed minimal evidence of any proactive strategies for developing and maintaining trust as part of standard project management practice. Furthermore, irrespective of the procurement mechanism, the default position in some instances remained founded on an adversarial approach to dispute resolution, despite an appreciation that alternative trust based approaches would likely result in improved project outcomes. Consequently, improved outcomes could be realised through dedicated strategies for trust building, and embracing a trust based response to dealing with negative events.

**Trust repair**

In terms of trust repair, strong relationships were widely considered valuable when responding to negative events however there was little evidence of trust repair techniques, nor of the intricacies of trust repair itself. An understanding of how the trust repair process differs from initial trust development (Kim et al. 2004) would therefore be useful. The interviewees were also silent regarding the variable influences on trustworthiness of the apparent grounds for the negative outcome, in terms of the extent to which the cause is deemed internal, controllable or stable to the trustee (Tomlinson and Mayer 2009). A greater level of understanding in this regard would also be beneficial in both procurement environments.

**Risk and trust**

The link between risk allocation and trust in stakeholder relationships was also significant in both procurement contexts, with divergent outcomes evident in this regard. To this end, the outcomes were not definitively driven by the underlying principles relating to the chosen procurement mechanism, but rather by the extent to which risk was identified and allocated amongst the project stakeholders at the commencement of the project. In both procurement contexts, poor risk apportionment was shown to lead to "a level of resentment" (Int. # 9- Project Manager), and an environment which was "adversarial" (Int. # 4- Client). Similarly, irrespective of the procurement mechanism, where a balanced approach to risk apportionment was adopted, positive outcomes were achieved. “As long as we have identified the risk and
we have made allowances for it” we can avoid “adversarial”, and “contractual head bashing” (Int. # 4- Client). It is therefore apparent that a greater understanding of the risk/trust nexus and the apportionment of risk in any procurement mechanism would be beneficial. To this end, the overall interests of the project need to be the driver for risk apportionment, as when risk is allocated to an individual with a limited ability to adequately manage it, adversarial interactions and reduced levels of trust can be the result.

The underlying principles of RC are also significant in terms of the risk/trust nexus. Through encouraging themes of collaboration, benevolence, communication, competence, and ultimately trust, these principles aim to facilitate the development and maintenance of strong relationships. However, while these principles do in deed nurture trusting relationships, the allocation of risk within relational procurement actually diminishes the need for trust. Trust cannot transpire without one party accepting a degree of risk, and given that the parties in RC are sharing risk collectively rather than accepting it individually, the requirement to embrace trust and its dimensions is to some degree negated. The full benefits of trust and trusting relationships may therefore be inadvertently hindered within a RC environment, despite fundamental principles to the contrary. The design and implementation of future RC mechanisms would subsequently benefit from a deeper level of understanding in this regard.

**Individual personalities**

Regardless of the procurement context, the individual stakeholders themselves were widely considered to be the most significant influence on project outcomes, with issues of trust fundamental in this regard. “The attitude of people is key” (Int. # 7- Client), and “in any contract, it comes down to having the right people for the task more than anything” (Int. # 12- Project Manager). “It's all about people, individual people, and the relationships they build” (Int. # 10- Project Manager), and “things succeed or fail on the personalities involved” (Int. # 6- Contractor). Hence a greater focus on stakeholder selection during the formation stages of any project would be valuable.

While the respective procurement mechanism was shown to drive behaviour to some degree, the personal traits of the individuals involved, and how they choose to behave and interact within the constructs of the contract were considered most critical. “People are always key, but the different styles of contract procurement can place certain pressures on the team that can put a lot more tension in relationships” (Int. # 7- Client). The human element influencing any project environment was also acknowledged. "If there is not a human connection, it will
not work anyway" (Int. # 10- Project Manager). Ultimately, the respective procurement mechanism was considered to be secondary to the influence of individual personalities. "The formal contract does not build trust. The building of trust and relationships, etc. etc. It is all the informal process" (Int. # 13- Project Manager). To this end, personal characteristics of competence, honesty, benevolence and trustworthiness, were highlighted, along with willingness for open communication and a cooperative approach to resolving issues when they arise. While dimensions of trust within the context of this human element were recognised, a greater understanding regarding the activation of trust (Wong et al. 2008), excessive control and distrust (Pinto, Slevin, and English 2008), and the reduced need for control through trust (Aubert and Kelsey 2000), would likely prove beneficial irrespective of the chosen procurement mechanism.

Conclusions
Stakeholder relationships operating within any construction environment are governed to a large degree by the chosen procurement mechanism. To this end, the transactional based approach of traditional procurement can be seemingly at odds with the facilitation of trust-based interactions. Similarly, the fundamental principles of relational contracting could be considered more conducive to, and reliant upon developing and maintaining high levels of trust. Hence varying and divergent influences of trust and its constructs would reasonably be expected within the management of projects operating under different contractual arrangements. However, this research has revealed that the chosen procurement mechanism is secondary to other more significant and influential factors.

The allocation of risk is instrumental in terms of driving stakeholder relationships and project outcomes, irrespective of the procurement mechanism. The respective risks on any project should therefore be a primary consideration in terms of the type of procurement mechanism, as well as contractual design. The fundamental principles of the selected procurement mechanism should also acknowledge the intricacies of the risk/trust nexus, and aim to find common ground between appropriate risk allocation and the development of trusting stakeholder relationships.

Given the reported importance of personal attitudes and subsequent trust-related behaviours to the subsequent conduct of project activities, it is perhaps an anomaly that attention is focussed on procurement as the primary determinant of project outcomes. Whilst the
formalisation and mandating of trusting beliefs and behaviours is clearly impossible, more attention could be given to understanding the nature of a formalised environment conducive to allowing such behaviours to flourish.

References


4.6 Publication number five

4.6.1 Statement of authorship and contribution of others

Publication details


The co-authors attest that whilst the candidate is the last named author on this paper his insights regarding the nature of trust, and the experience of trust during construction projects played a key role in the design of the research reported in this paper. Specifically, his conceptual model of influences on trusting behaviour, trust failure and trust repair were adopted during the analysis of the research data. The candidate assisted in conducting that analysis.

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Marcus Jefferies
4.6.2 Introduction

Publication number five is titled “An evaluation of philosophical disposition and operational reality of ‘Alliances’: The risk-trust perspective”, and was published in The Proceedings of Royal Institute of Chartered Surveyors (RICS), COBRA Conference, 2013.

Publication details are as follows:


4.6.3 Exhibit Five – An evaluation of philosophical disposition and operational reality of “Alliances”: The risk-trust perspective
AN EVALUATION OF PHILOSOPHICAL DISPOSITION AND OPERATIONAL REALITY OF ‘ALLIANCES’: THE RISK-TRUST PERSPECTIVE

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ABSTRACT

The ‘Alliance’ approach to project procurement has assisted in minimising adversarial relationships among parties in a project and has delivered successful project outcomes. It is argued that ‘Alliance’ through ‘sharing risks’ and ‘developing trust’ among the parties in a project creates an environment conducive for managing complex projects. Notwithstanding the popularity of Alliances, a recent review of Alliances in the Australian context identified some discontent with this procurement method, specifically in terms of delivering ‘value for money’. The aim of this paper is to identify the factors contributing to the divergence in the ‘alliance’ theory and ‘practice’ contributing to the discontent. This paper will focus on ‘risk’ and ‘trust’ as two key concepts to develop an understanding about the issues associated to Alliance practice. This research assumes constructivist worldview, accommodating multiple realities of the world. Data collected through qualitative approach, using semi-structured interviews with participants who have experience with Alliance was analysed to identify key themes relating to the aim of this paper. The findings suggest that the differences in the theory – practice of Alliancing emanates through actions from at least three key alliance stages; establishment of business case, tender process, KPI/value for money assessment. Owners (or clients) are more conscious of the ‘trust’ factor in Alliances due to assuming a risk profile that needs to generate value for money.

Keywords: Alliance, (non) adversarial, risk, trust, relationship.

INTRODUCTION

Despite widespread use of relationship contracting in the form of Alliancing procurement mechanisms in the Australian public sector, the Department of Treasury and Finance commissioned a critical review on the ability of alliances practices to deliver value for money.
(VfM). The finding of the review (Department of Treasury and Finance 2009) indicated some disenchantment with the VfM thus obtained. Although the trust-risk relationship is previously studied in various context (Doloi, 2009; Chow et al. 2012; Dewulf and Kadefors, 2012) previously studies, aim of this paper is to identify the factors contributing to the divergence in the ‘alliance’ theory and practice that contribute to this discontent, focusing on ‘risk’ and ‘trust’ as two key concepts.

Alliancing: The Theoretical-Practical perspectives

Public sector agencies (Department of Treasury and Finance, 2006; Department of Infrastructure and Transport 2011) view Alliancing as a relationship contracting mechanism that is suited to projects which face complex and unpredictable risks and are also difficult to define and the cost of transferring them is prohibitive. Risk in the context of Alliancing can be analysed from the perspectives of ‘owners’ (client/procurer) and ‘non ownership parties’ (NOPs: service providers/ contractor(s)/ consultant(s)) (Love et al. 2011a). In a broad sense, risk can be classified into global and elemental risks (Jefferies & Chen 2004). Global risks encompass: Political (government, policy related), Legal (agreements, change in legal environment), Commercial (market, input, currency) and Environmental (impact, ecological issues). The Elemental risks encompass: Technical/construction (physical conditions, design etc), Financial (costing, cash flows, value for money etc), Operational (maintenance and running of facilities).

The Alliancing mechanism develops relationships, where two or more parties rely on each other to materialise their objectives (Sheppard & Sherman, 1998), partially through formal contracts. Alliances share the risks among the parties to a project, specifically addressing fear of exploitation among non-owner parties-where trust is seen essential (Mayer, et al., 1995). Nevertheless, the presence of a relationship and ongoing interactions within that relationship are key determinants for the development of trust (Karlsen, Graee, & Massaoud, 2008). Literature suggests mutual trust among the parties to a (Alliance) project is an important aspect in achieving project success (Chow et al., 2012). Trustworthiness, denoted through one party’s willingness to act in the best interests of other parties (McLain & Hackman, 1995; Brewer & Strahorn, 2012), will determine the characteristics and actions (Johnson-George & Swap, 1982) in a team. Communication (Doloi 2009), reliable behaviour (Karlsen et al., 2008), competence (Gajendran and Brewer 2012), benevolence, integrity, and honesty of the individuals in the parties (Wong and Cheung, 2005) are key attributes for developing trust. In
essence ‘trust’ is related to how individuals assign some quality or character to another person within the project team.

The pre-emptive display of trustworthy behaviour from the inception of a project is a natural characteristic of an alliance that mitigates effects of non-trustworthy behaviour of parties on project outcomes (Munns, 1995). However, for this to be effective, a clear understanding of the initial intent and expectations of the parties involved in a project is essential.

**Risk and trust in the context of Alliencing**

Risk - trust relationships have been explored in different contexts including in different procurement methods (see Doloi, 2009; Jin and Doloi, 2008) and national contexts (Jin and Ling, 2005). Studies have approached (a) trust to be a consideration when risk is being present in a task and task based relationship i.e. risk is one of the factor for development of trust (Mayer et al 1995) and also (b) trust as a risk-taking act (Chow et al., 2012). Formation of an Alliance is a complex process (Love et al 2011b) that involves above two stated trust conditions. Figure 1 presents a conceptual view of Alliance project environment through Risk and Trust concepts. Alliance procurement approach is focused on nurturing behaviours and fostering non-adversarial and innovative behaviour by sharing risks and fostering trust through appropriate contractual mechanisms (Davis and Love 2011). Risks can be controlled or managed contractually (formally) (Love et al 2011b) and non-contractually (relationally/clan) (Ouchi, 1980; Baker, et al. 2002), where the latter emphasises higher levels of trust. However, all project alliances use contractual approaches to manage (or share) risk and protect stakeholders from feeling vulnerable - collectively encouraging the development of trust in a project setting (Wong, et al., 2008). This trust among parties to a project can reduce the need for stringent control (Ouschi 1980), by fostering relationships whereby individuals are able to interact without concern of exploitation. A lack of contractual understanding about relationship-based governance mechanisms often leads to Alliances being predominantly dependent upon the good behaviour of individuals (Edkins and Smyth 2006); that is, they predominantly rely on ‘trust’ to mitigate some of the risks posed in project environments creating a condition of trust as a risk taking act (Chow et al., 2012). However the form and operational arrangements of alliances has significant implications to project cost born by the owners.
Positive motivation towards the overall project objectives reinforced by the presence of trust among the alliance parties (i.e. and individuals in the party) can create a project environment conducive to non-adversarial behaviour and foster innovation leading to successful project delivery (Wong, et al 2008).

Research Methodology
This research is underpinned by the ‘constructivist’ paradigm to accommodate the multiple realities of the world (Creswell and Clerk 2007) as construed by the different stakeholders. The constructivist paradigm enables analysis of diverse perspectives and experiences of the members of the project team arising from varying realities or multiple world views held by them. Data was collected using interviews contextualised in phenomenological principles (Roulston, 2010). Thirteen individuals in key positions in the client, contracting and consulting organisations were interviewed. The interviewees have experience in different
Alliance projects (including, rail, road, electrical, water infrastructure etc) ranging in value from A$ 200M to 2B. The exploratory interviews were approximately one hour and recorded. Following this stage, the transcribed interview data underwent a thematic analysis process to abstract the general themes displayed in the data. Abstractions were made linking the themes to arrive at the findings. The following section presents the abstractions arrived at via qualitative thematic analysis process.

Analysis

Risk in the task environment and trust
The result indicates that some clients formed Alliances to reduce the risk associated with delivery target times, while others did this primarily to manage project specific risks such as geotechnical/design risks that warrant collaborative and innovative intervention. The trust is part of the governance in reducing the risk associated to task environment. Nevertheless, with their experience with Alliances, some owners indicated that the project risks in the construction of most infrastructure projects (e.g. roads or rails) are relatively manageable in comparison to projects like design and construction of the ‘next generation nuclear power station’ – a type of project that in their view, Alliancing can add value for money to.

At one level some collaborative contracts – the components of formal and informal elements- can be really ambiguous. Collaborative agreements generally involve negotiations among senior level managers of the respective organisations stipulating the commercial agreement. Once they are formed they are not referenced in day-to-day operations and most members in the Alliance do not see them. As these arrangements are commercially focused, more articulate operational arrangement procedures need to be stipulated during the initial stages of the project, to reduce the ambiguity in the operations. Despite this, some individuals find it difficult to survive in a working environment where ambiguity is inherent. The collaborative nature of working in most Alliances naturally preludes clear stipulation contract based behavioural protocols for members working at operational levels. That is, there is no contract they can refer to on an on-going basis, to make decisions about tenuous situations. Some individual personalities (e.g. engineers) find it difficult to position themselves in such ambiguous environments. As an example, some find it difficult to contextually position and re-position their loyalties, should it be to the Alliance or to the firm they are attached to. Such individuals can contribute to the claim of lack of transparency that leads to bad outcomes for
an Alliance. This leads to issues of trust in relationships among the members of the project team.

**Dimension of trust in relationship in the formation and operation of Alliances**

The results suggest that elements of trust related to an individual’s personality traits, i.e. honesty, integrity and benevolence that are not purely controlled by formal contractual mechanisms are crucial for fostering non-adversarial relationships. Irrespective of the contractual arrangement, owners generally prefer to work with non-owner parties, with whom they already have some form of trusting relationships. The results indicate that the prior professional relationship between parties will enable them to settle issues more effectively.

Results also indicate that ‘transparency’, specifically in the goals, objectives, plans, process and finances, is fundamental to good relationships. Transparency in relationships is not entirely dependent upon positive personalities of the team members, but is also influenced by the ‘contractual mechanism’. Alliances formed through ‘non-price competition’, are primarily focused on people issues, developing behaviours that are open and transparent. Therefore, a significant amount of resources are spent on training/workshops to develop relationships and collaborative approaches, in order to avoid an adversarial environment.

“… Alliance document which is very collaborative and very open book still has so many areas where that transparency breaks down once it breaks down and once you have lost that trust the whole thing fails…. In a collaborative contract [can] we also lose a sense of urgency because that commercial imperative falls away and effectively in our contracts they will get paid for what they spend…” (Senior Manager - Client Organization 1).

“open communication.... the trust would go into it, reliability, capability would obviously be there as well..... pro-activeness..... (Senior Manager- Client Organization 2).

Ability of individuals to openly communicate is seen as fundamental for building good relationships. Therefore, individuals/managers in the Alliances who are not good communicators and are prone to use litigious language, will damage the spirit of Alliance. If they are not open communicators then they:

“are working in wrong delivery mechanism you have to find a different one…. Most people can find their niche in a hard dollar world…. Some people really struggle in alliance and we have had to say that to people and let them go” (Senior Manager - Client Organization 1)
To some level, the existing relationship and trust between the owners and the prospective non-owner participants, plays a part in alliance NOP selection process. Client’s use of the tender screening process exercises control over who will be in the team. However the balance is important to ensure existing relationships are not blinded to the point of ignoring the commercial imperative. One owner suggested that that as Alliances are formed with the intention of precluding conflicts through formal contractual mechanisms, the seminar members of NOP organisations did not see the need for the continued investment in relationships building, for the purpose of resolving potential further conflicts.

It was suggested that even with tough selection process, Alliance teams could display different trust behaviour once they are selected - as most of the teams are coached about how to behave in the selection process. One owner indicated they expect such occurrences, but make allowances to work within any resultant environment. The overt conflicts (tensions) in an Alliance are mostly related to establishing/monitoring KPIs and budgets - generally apparent during the establishment of commercial alignment at the start of an Alliance and every time Total Outturn Cost (TOC) is set or adjusted. From the client’s perspective, the other source for conflict, generally minor, is the sense of a lack of urgency/financial responsibility from the contractors. Some clients feel that as the non-owner parties are generally reimbursed all cost and are making profits some of NOPs spend with disregard. This could lead to break in some level of trust in the relationships.

**Trustworthiness - Value for money- Quality issues**

It was evident some project Key Performance Indicators (KPIs) –mostly developed based on trustworthiness aspects (competence, benevolence and integrity) - could unconsciously lead to negative project outcomes. As an example, a bonus for on-time delivery created the worst outcome for one owner, in terms of low quality output. The bonus KPI became a commercial driver rather than a project driver that led the contractor to accelerate the project, spending client’s money to get the bonus, and compromising quality outputs. Quality problem could not be sensed, until the operational stage, due to number of issues (a) nature of the commercial arrangement - as the payments were based on cash flow and done in advance to create a positive cash flow (b) oversight (or trust) by the client in drafting the commercial arrangement and (c) lack of owner competencies in managing specific aspects of Alliances. Despite the VfM issues (primarily the clients concerns) all stakeholders felt Alliances have been very successful in delivering the projects with a level of certainty.
Discussion and conclusions

The results suggest that owners and NOPs have mixed views on Alliance operations and their consequent trust relationships based on the exposure to both task and relationship risks. Concerns regarding Alliances can be traced to the key stages of Alliance formation and operations – namely, establishment of business case, tender process and KPIs, and VfM assessment. Although the key results of this study resonate with the issues identified in the Department of Trade and Finance (2009) report, this paper provides further illustration through concepts of risk and trust.

Results indicate that most Alliance team owner representatives and NOPs were satisfied with the Alliance selection process and indicated it enabled them to develop overall good relationships among project team members and to work well together as effective teams (Ref Figure 1 Alliance team sphere). Most disputes between the owner and the NOPs in Alliances were resolved within the Alliance. However, some clients were dissatisfied when NOPs did not make available the promised individuals to the project, or when such individuals left the alliance prematurely during the project (i.e. the A team was replaced with B team). This was seen as a potential elevation of risk and breach of trust, by clients and needed addressing in the tender process and project agreements.

Problems in one of the program Alliances studied were mostly associated with the justification of the business case- where the level of risk in the task environment may not justify the Alliance governance. This Alliance was formed with the various aims of: reducing the commercial risks; securing resources in a buoyant construction market; early project commencement/meeting of project deadlines, and lack of client experience. This seems justifiable: the Department of Trade and Finance (2006) suggests Alliances may be considered for projects that “needs to start as early as possible before the risks can be fully identified and/or project scope can be finalised, and the owner is prepared to take the commercial risk of a sub-optimal price outcome”. However, the Alliance Guide by Department of Infrastructure and Transport (2011) suggests that such issues/risks may not be the best justifications for utilising an Alliance approach since it will be skewed towards addressing these issues instead of creating genuine ‘value for money’ propositions – the stated purpose of Alliancing. This suggests that an objective evaluation of risk perception is required to evaluate whether governance based on trust should is required used.
The results indicate a lack of establishment of a clear ‘business case’ and objectives for this Alliance led to cost increases. Department of Trade and Finance (2009) findings suggest that the ‘default’ non-price selection approach had the potential to contribute to the erosion of VfM. In addition this approach in Alliance projects --which by nature are complex -- could expose owners to serious information asymmetries, thereby hampering their capacity to engage with NOPs (Wong and Cheung, 2005). Exploitation of information asymmetries could elevate owner’s risks and diminish owner’s level of trust on NOP’s. Although not always appropriate, the introduction of some form of ‘traditional’ competitive tension can address such asymmetry (Love et al., 2011 a). Alliances deliver best value when they are formed to address complex project risks that require creation of collective knowledge and innovation (Department of Transport and Finance 2012). It is suggested that introducing competitive measures can achieve the desired level of innovation by providing competitive tension between client and NOPs (Love et al. 2011a).

Objective assessment of the performance of Alliance projects, especially in defining and assessing their innovation outcomes to which financial incentives were attached, was a key concern of clients in evaluating the VfM. These performance targets were generally reflected in ‘key result area achievements’ stipulated in agreements under the non-price criteria (Love et al., 2011a). One of the key challenges in establishing these targets in the agreements was ensuring that the targets themselves did not compete with each other. In one case, since the estimated costs associated with pursuing high quality target outcomes were paid by the client (i.e. included in the TOC) this created a source of risk for the client e.g. having early completion targets with incentives impacted on the quality of the project.

In some projects it was reported that quality could only be objectively evaluated during the post-construction phase making it difficult to identify issues during the construction of the project. Moreover, the results indicate that ‘breakthrough’ outcomes or ‘project innovation’ were not commonly achieved despite significant investment in ‘high performance teams’ (Department of Transport and Finance 2012). Some clients disagreed with the target outcome self-evaluations conducted by their own Alliance team members (i.e. owner representative) indicating the sharp differences in the perspectives within the Alliance team and rest of the client organisation (ref Figure 1) leading to lack of trust.

Together these findings suggest deviations from current theory, emanating from actions during three key stages; establishment of business case, tender process and KPI/value for
money assessment. Firstly, level of risk present in the some project environments, evaluated during business case, need not warrant greater level of trust based of governance. Secondly during the tender process (which based on non-price criteria) and award some level of trust is placed between parties contributing to risk taking in relationship based. However, owners negative experience relating to KPIs achievement and value for money can lead to diminishing trust in the relationship with NOPs.

References


Department of Treasury and Finance (2009) In Pursuit of Additional Value A benchmarking study into Alliancing in the Australian Public Sector, Department of Treasury and Finance, Victoria.


4.7 Publication number six

4.7.1 Statement of authorship and contribution of others

Publication details

The co-authors attest that their involvement in the production of this paper was limited to supervision of the candidate, confirmation of alignment of its contents with its stated aim and objectives, typographical/stylistic checking and advising the candidate that as to appropriate responses to reviewers comments.

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4.7.2 Introduction

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4.7.3 Exhibit Six – The influence of trust on project management practice within the construction industry
The influence of trust on project management practice within the construction industry

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Abstract

Given that any construction project is inherently a human endeavour, it follows that issues of trust are significant in terms of the stakeholder interactions that deliver eventual project outcomes. Previous research indicates that the relational basis upon which projects are undertaken are intended to influence the likelihood of trusting relationships between stakeholders. Thus, experiences of trust in a construction project environment are likely to be influenced by the contextual specifics of respective transactional and relational contracting (RC) procurement mechanisms, given the divergent theoretical principles upon which they are founded. The influence of trust has therefore been examined through the lived experiences of construction practitioners. A phenomenological interview study consisting of thirty-five (35) participants was conducted with sensitivity to the procurement of experiences being recounted. Issues of trust were shown to be integral to stakeholder experiences in both procurement environments, with the benefits of trust acknowledged in many instances. However, little understanding was evident regarding methods for building and maintaining trust, nor for repairing trust when problems arose. Importantly, despite the differing principles that underpin transactional and relational procurement, and particularly the contention that relational procurement would increase trust between trading partners, this was not evident; with individual personalities and appropriate risk apportionment shown to be greater influences upon the likelihood of trusting relationships. It is reasonable to conjecture that relational contracts actually diminish the need for trust, given that the objective is to reduce uncertainty through formulaic approaches to risk distribution and reward; the absence of risk negates the need for trust. Ultimately, the potential to deliver improved project outcomes as a result of proactive approaches to developing and maintaining trust, as well as repairing trust after difficulties, was shown to apply under all procurement conditions.

Keywords: Trust, relationships, project management, procurement.

Paper type: Research article

Introduction
The issue of trust is fundamental to all aspects of human interaction (Gad and Shane, 2014), and given the human component required to deliver any construction endeavour (Lechler, 1998), trust and dimensions of trust are therefore significant. While much has been written regarding trust across numerous disciplines, any investigation of trust within a construction project management setting cannot ignore the contextual particulars which govern and influence any construction environment.

Whilst it is clearly the case that trust is ultimately an interpersonal phenomenon that arises out of some sort of power imbalance, much has been written in relation to the influence of alternate procurement instruments used for construction projects and the likelihood of a trusting relationship eventuating between client and contractor (Che Ibrahim, Costello and Wilkinson, 2011; Gad and Shane, 2014; Guo, Lu and Song, 2013; Kumaraswamy et al., 2005a; Laan et al., 2011). In particular, there has been an emphasis upon relational contracting (Doloi, 2009; Goddard, 1997; Rahman and Kumaraswamy, 2008; Rahman, Kumaraswamy and Ling, 2007) and project alliances (Chow, Cheung and Chan, 2012; Davis and Love, 2011; Sakal, 2005; Walker and Lloyd-Walker, 2016) as vehicles for the formation of increased levels of trust across project teams.

Plainly an investigation of trust related issues requires a clear understanding of what is meant by trust and the various dimensions associated with it (e.g. formation, maintenance, loss, repair, and so on) before meaningful research can be undertaken. Such a framework of concepts and explanations has been constructed and reported elsewhere (Brewer and Strahorn, 2012) and underpins this current investigation. It should be clearly understood that the nature of trust and trusting relationships remains constant irrespective of the context – or procurement mechanism – under which it is exercised. It follows that trusting intentions– or absence thereof – will be shaped by the context within which they occur (i.e. the procurement context).

The experience of trust is a deeply individual phenomenon: that whilst onlookers might believe that they detect the consequences of trust or its absence upon a particular relationship, they cannot "know" the experience themselves, nor can they claim to have "observed" trust in any deep and meaningful sense. It follows that to understand the various phases in (non-)trusting relationships it is necessary to examine the phenomenon through the "lived experiences" of trustors and trustees. Moreover, given that the unit of study is the individual's lived experience of trust/mistrust/distrust – as opposed to understanding both
sides of a specific relationship – it follows that the examination of dyadic relationships is not necessary to fulfil the research aim.

Accordingly, a phenomenological interview study of thirty-five (35) industry practitioners was conducted to examine the influence of trust through the lived experience of construction practitioners. The contextual specifics of respective transactional and relational procurement mechanisms were considered. Despite the fundamental differences that exist between the principles of alternate procurement mechanisms, similar outcomes were evident in terms of trust, and eventual project outcomes. Both the initial apportionment of risk, and the individual personalities of stakeholders were found to be of greater consequence than the use of transactional or relational procurement mechanisms.

Literature review

Trust

The practice of project management within any construction endeavour is inherently reliant on the actions of project individuals (Lechler, 1998) who collectively interact as a project team in the pursuit of overall project objectives. Given that these interactions take place on a human level, the issue of trust is fundamentally significant (Gad and Shane, 2014). To this end, the value of trust in human behaviour is widely acknowledged (Bigley and Pearce, 1998), and is ultimately considered to be the essential requirement that makes human interaction possible (Romahn and Hartman, 1999).

With consideration to the universal nature of trust, predictably much has being written across many disciplines, and within divergent contextual settings. An abundance of trust models subsequently exist, with their construct and development generally dependant on the definition of trust adopted by the respective research discipline (Mayer, Davis and Schoorman, 1995). It is therefore apparent that there is no single trust model that can provide universal applicability across disciplinary boundaries (Romahn and Hartman, 1999), with the subjective nature of trust similarly problematic in this regard (Becerra, Denzinger and Kremer, 2001). Hence, this research has taken a broad approach to trust literature generally, with a particular focus also given to the discipline of management. Consequently, with consideration to the practice of project management within a construction project context, an applicable framework of trust themes can be considered along contextual, human and
attribution variables, with factors of trust failure also deemed significant (Brewer and Strahorn, 2012), as illustrated in Figure 1.

Figure 1. Framework of trust themes; Adapted from Brewer and Strahorn (2012)

Contextual variables of risk, vulnerability and uncertainty are significant in terms of trust, particularly given the risk management function of the respective procurement mechanisms under which construction projects are delivered. Every project environment is unavoidably subject to risk (Schwalbe, 2004), and any efforts to mitigate issues in this regard are critically dependant on trust and its dimensions (Gad and Shane, 2014). To this end, the benefits of trust cannot transpire without one party’s willingness to accept some form of risk (Chow, Cheung and Chan, 2012), while trust also encourages an individual’s positive motivation
towards universal project outcomes (Wong et al., 2008). Ultimately, trust assists to overcome risk and uncertainty (Gad and Shane, 2014).

The human variables influencing any project are logically significant given the human effort required in any project endeavour (Lechler, 1998). In this regard, trust is considered to be determined by the ongoing interactions within stakeholder relationships (Ceric, 2014), with attribution variables in which character traits are assigned amongst stakeholders similarly influential. Dimensions of trustworthiness are subsequently of note (She, 2013), as are mutually related trust building mechanisms; communication, reliable behaviour (Karlsen, Graee and Massaoud, 2008), honesty, integrity, benevolence and competence (McKnight and Chervany, 1995).

The potential for trust failure in any project environment is ever real, and the need to repair lost trust in stakeholder relationships is consequently important. When negative events inevitably eventuate, stakeholder relationships can be harmed (Lewicki and Bunker, 1996), leading to reduced trust and a requirement for trust repair (Kim et al., 2004). Trust levels from the perspective of the respective individuals will be influenced according to the underlying cause of any negative event (Lewicki and Bunker, 1996). In this regard, perceptions of trust will be considered according to internal, controllable or stable characteristics afforded to the trustee (Tomlinson and Mayer, 2009). The stability characteristic is deemed to be the most influential (Weiner, 2001), as context specific behaviour fosters the perception that under similar circumstances, the same results can be expected in the future (Sitkin and Roth, 1993).

In any trust repair effort, irrespective of a mistrusted party’s efforts to display trustworthiness, low levels of trust will be compounded by the memories of any trust violation that inevitably remain (Slovic, 1993). Hence, the process of trust repair differs from initial trust development, and is inherently more complicated. Positive expectations in a relationship need to be restored, while lingering negative expectations also need to be overcome (Kim et al., 2004). Consequently, any attempt at trust repair is likely to involve greater effort than was required to establish a trusting relationship initially (Kim et al., 2006).

**Construction procurement**

In striving to deliver any construction project, the selected procurement mechanism logically provides the framework under which project stakeholders interact, with contextual specifics
in this regard similarly significant in terms of trust and its influence. Hence, in investigating the influence of trust on project management practice within the construction industry, the fundamental principles, and subsequent project environments specific to the respective procurement mechanism must be considered. The value of trust is acknowledged in both transactional and relational procurement mechanisms (Gad and Shane, 2014). However, generally speaking, transactional based procurement approaches are considered to inherently hinder the development of trust between project stakeholders (Che Ibrahim, Costello and Wilkinson, 2011). While relational based procurement approaches are considered to be more conducive to the development of trust (Laan et al., 2011), although it is acknowledged that the display of trust within this environment is none the less not guaranteed (Lau and Rowlinson, 2009). Hence, within the context of trust and its influence, the fundamental principles of the respective procurement alternatives have been explored.

**Transactional procurement**

The transactional (traditional) procurement approach customarily utilised within the construction industry adopts a definitive approach to risk allocation, despite the fact that it is fundamentally not possible to anticipate or quantify all potential risks and uncertainties (Macneil, 1978). Given the challenges inherent in any construction endeavour, the ability to contend with change and appropriately allocate and manage risk is critical (Gad and Shane, 2014). To this end, transactional frameworks are to some extent inadequate (Che Ibrahim, Costello and Wilkinson, 2011), particularly when dealing with high risk and complex construction projects (Campbell, 2004). Hence, effective risk management is unavoidably compromised.

The shortcomings of this procurement approach have been widely acknowledged; contractual imperatives encourage individual interests to be placed in front of overall project interests, resulting in disputes (Chan et al., 2006); adversarial relationships are prevalent (Chen and Chen, 2007), and can be ascribed to the competitive fixed price context (Pesamaa, Eriksson and Hair, 2009); onerous contract conditions can lead to irresponsible tendering, with the potential for opportunistic parties to exploit contract documentation in terms of tender price, expected variations, and errors or omissions (Rahman and Kumaraswamy, 2012); the contractual arrangements which mandate project processes can often facilitate inefficiencies (Doloi, 2013).
As a consequence of these shortcomings, sub optimal outcomes in transactionally procured projects have resulted, including conflict and distrust (Sakal, 2005), reduced productivity (Sakal, 2005), disputes (Pesamaa, Eriksson and Hair, 2009), cost over runs and project delays (Chan, Chan and Ho, 2003). A predilection for legal action (Yiu and Cheung, 2007), and disagreement rather than cooperation (Wood and McDermott, 1999), are also frequently common place.

The requirement for alternative procurement mechanisms has subsequently being widely acknowledged (Che Ibrahim, Costello and Wilkinson, 2011). With a focus on the definitive allocation of risk, a transactional approach ultimately fails to contractually recognise or enable the cooperative relationships that are considered critical to the success of any contractual arrangement in terms of dealing with issues when they eventuate (McInnis, 2003). Within the contextual specifics of projects procured under a transactional framework, the human element which influences project outcomes is therefore significant.

**Relational contracting procurement**

Relational contracting (RC) embraces themes of cooperation in stakeholder relationships, and strives for a mutually beneficial, win-win culture throughout the project team (Rahman and Kumaraswamy, 2004). With an adversarial culture often the norm within the construction industry, RC was developed as a counter to the widely accepted shortcomings of the traditional transactional based approach (Goddard, 1997). Founded on principles of collaboration (Rahman and Kumaraswamy, 2004), and appropriate allocation and management of risk (Jones, 2000), RC aims to nurture benevolent relationships between contracting partners which overcome transactional barriers to team building (Macneil, 1980). By adopting a dynamic and mutually beneficial approach, a contractual, economic and behavioural RC framework allows stakeholders to move away from a reliance on strictly legal terms (Macaulay, 1963). Furthermore, the contractual landscape in any construction endeavour is inherently subject to change. Hence, the ability for a relational contract to provide the context in which strong relationships can be developed and maintained is critical, and overcomes the typical failings of a traditional transaction based procurement approach in this regard (Rahman and Kumaraswamy, 2004).

The widely recognised benefits of collaboration within the construction industry (Gajendran and Brewer, 2012) are particularly pertinent in terms of the fundamental principles of RC, and the central desire to reduce conflicts (Rowlinson and Cheung, 2005). The question of
how to cultivate a collaborative environment is therefore important. To this end, distribution of authority, along with mutual objectives and actions are considered antecedents to effective collaboration. Themes of individual competence, communication and trust are also identified and are of particular relevance within the context of this study (Gajendran and Brewer, 2012).

In terms of the investigation of trust which is central to this study, the fundamental principles of RC are significant. Reoccurring themes and dimensions in this regard include; relationships, team work, collaboration, communication, culture, risk management, trust between parties, trust and trust based relationships, ability based trust, and mutual trust (Cheung et al., 2003; Ngowi, 2007; Rahman and Kumaraswamy, 2004; 2008; Rahman, Kumaraswamy and Ling, 2007).

While the ultimate benefits of RC are broadly acknowledged (Rahman and Kumaraswamy, 2004), there remains some criticism that literature professing its advantages, fails to adequately consider the inherent limitations of this approach, nor the poor examples that have at times eventuated (Bresnen, 2007). However, these criticisms have not attempted to challenge the potential advantages of a RC approach. Furthermore, it is also accepted that a universally applicable solution in terms of any RC mechanism is not achievable, and that success in this regard is strongly dependant on application and context (Bresnen, 2007).

Within the Australian construction sector, Alliancing is a form of RC in which long term strategies between client, contractor and supply chain are developed (Rowlinson and Cheung, 2004), and risks and rewards shared, in the pursuit of common project objectives (Peters, Walker and Hampson, 2001). Critical success factors for Alliance projects align closely with the fundamentals of RC; trust, collaboration, relationships and relationship management, cooperation, open and honest communication, joint problem and conflict resolution, team selection, goal alignment, team work, a win-win philosophy, and total organisational buy in (Chow, Cheung and Chan, 2012; Peters, Walker and Hampson, 2001; Rowlinson and Cheung, 2004; She, 2013; Yeung, Chan and Chan, 2007). Trust and dimensions of trust are commonly acknowledged in this regard, and are categorised within the “soft” elements that form one part of any alliance arrangement (Yeung, Chan and Chan, 2007). These “soft” elements are of consequence within the context of this study.

The second part of an alliance arrangement concerns the “hard” contractual elements that are none the less required in order to spell out in strictly legal terms the rights and obligations of the respective alliance partners (Love et al., 2011). Hence, despite the collaborative approach
central to an alliance, an explicit contractual element is still required. To this end, the collective sharing of risk is defined, and the pain-share, gain-share agreement determined in line with a best for project approach (She, 2013). Fundamental themes of trust and goal alignment are further encouraged via a “no dispute” clause that is generally included (She, 2013). Nevertheless, a no blame culture or contract is not possible without a definitive relational vision, and a proactive approach to relationship management. This further emphasises the value of the softer elements in any alliance arrangement. In this regard, the provisions that define an alliance contract appear to give little credence to the softer interpersonal aspects of a relationship, of which trust, as a response to risk, is pivotal.

Despite the success of many alliance projects, recent times have seen a decline in the use of this form of procurement in the delivery of infrastructure projects. Issues of trust are considered to be instrumental in this regard, and the ability for the pain share, gain share arrangement to align behaviours and values in project teams has being called into question (She, 2013).

**Research method**

When considering the variables which invariably influence the divergent contexts within which transactional and relational procurement mechanisms operate, trust is clearly relevant, and critically significant. Hence, the design of this research aims to consider theoretical trust themes against the lived experiences of practitioners in both procurement environments (Cohen and Daniels, 2001), with consideration given to human, technical and socio-technical dimensions. The human element is logically significant, as is the technical dimension that considers the respective legal frameworks upon which alternate procurement mechanisms are founded. The socio-technical dimension, influenced by the project context, (e.g. risk, control mechanisms etc.), essentially considers the interaction between the human and technical elements.

Central to the design and execution of the adopted methodology is the view that trust is a phenomenon that can be exposed via the detailed examination of lived experiences (Cohen and Daniels, 2001). Given the absence of a construction project specific theory of trust, a 'constructivist' perspective (Cresswell and Plano Clark, 2007) was suitably adopted, in order to examine the divergent perceptions and experiences of construction practitioners, and deliver a theoretical contribution in this regard. A phenomenological research method was subsequently conceived. An interview based study was developed and implemented,
embracing an 'emic' perspective (Pike, 1967) in order to capture lived experience. Accordingly, with consideration to trust and its influence, this phenomenological approach has conceptualised the meaningful world that exists via experience. Ultimately, by way of investigating lived situations, the experience of trust has been explained (Wertz et al., 2011). Interpretive phenomenological principles (Heidegger, 1927/1962) have guided the adopted methodology. In this regard, any experienced reality, which includes the relationships and interactions between individuals, is considered to be significantly influenced by contextual specifics (Lopez and Willis, 2004). Consequently, the interpretation of the narratives provided by research participants with consideration to context is fundamental (Lopez and Willis, 2004). To this end, the interpretive enquiry approach adopted has aimed to understand how factors specific to the respective life world of the selected research participants contributes to commonalities and differences between their individual experiences and the decisions they make (Lopez and Willis, 2004). Ultimately, the specific circumstances that inherently constrain the situated freedom of any individual (Leonard, 1999) provide the empirical reality form which understanding can emerge (Satre, 1993). By applying the developed trust framework (figure 1) to the lived experiences of construction practitioners in both transactional and relational procurement environments, the influence of trust on the practice of project management within construction projects has been identified.

The data for this study consisted of 35 interviews, conducted with various stakeholders from different sectors and multiple projects. All participants were suitably experienced (5+ years) in the delivery of major projects procured under either transactional or relational procurement mechanisms, with respective procurement categories within the data set assigned accordingly. Framed against the developed trust framework which consisted of 25 open codes and 74 axial codes (Brewer and Strahorn, 2012), a thematic analysis process was applied to the interview data. Multiple analysis rounds were undertaken, with open coding used to reveal prevalent trust themes, and axial coding utilised to provide detail. To this end, the axial codes essentially guided the analysis and discussion of relevant trust themes, with an ensuing process of synthesis ultimately allowing recurrent trust themes to be constructed and explained. A qualitative abstraction process was subsequently developed to compare the contextual specifics of transactional and relational procurement in terms of trust and its influence. To this end, the developed trust framework (Brewer and Strahorn, 2012) and the primary interview data were set aside (Dahlberg, Drew and Nystrom, 2008). By way of
bracketing (Dahlberg, Drew and Nystrom, 2008) in this regard, the generated findings aim to move beyond the original trust framework integral to this research (Giorgi, 1994).

A pair wise comparison methodology was adopted to examine the consolidated coding outcomes previously derived from the thematic analysis of the interview transcripts. Utilising the assigned transactional and relational procurement categories, this process essentially analysed the codes arising from each of the main trust themes independently of the counterpart coding outcomes in the other procurement mechanism. To this end, the salient points relating to each trust concept were summarised, with further codes consequently derived, and thereafter identified within respective conceptual models relating to them. By way of a pair wise comparison of the respective conceptual models, the influence of trust within the contextual specifics of transactional and relational procurement has been further examined, with pertinent issues highlighted.

Ultimately, this comparison has directly identified the divergences and confluences that exist between transactional and relational procurement in terms of trust and its influence.

Results and discussion

The results of the pair wise comparison process have explained the influence of trust on stakeholder experiences within both transactional and relational construction project environments. To this end, similarities and differences regarding the human, attribution and contextual variables of trust have been identified. Aspects of trust failure and repair have been similarly highlighted. Trust was ultimately found to be an integral part of stakeholder experiences in both procurement settings, with the interrelated nature of trust and its dimensions widely evident. For the most part, the results have confirmed the pan procurement influence of trust, and highlighted other more significant factors.

Human variables

In terms of eventual project outcomes (Pinto, Slevin and English, 2008), the human influence of relationships, initial intent, and the ongoing interactions between project participants was widely evident in both procurement environments, with themes of trust integral in this regard. Personal characteristics of trustworthiness, honesty, integrity, reliability, competence, and benevolence were considered advantageous in terms of developing and maintaining strong working relationships. Similarly, a demonstrated willingness for open and transparent communication, along with a collaborative and cooperative approach to problem solving
were also considered to have a positive influence. Conversely, exploitive, adversarial, or aggressive behaviours and attitudes, were shown to have a negative influence, with trust levels similarly affected.

It was widely evident that past experiences and/or relationships (Ceric, 2014), along with multiple interactions over time (Schoorman, Mayer and Davis, 2007), were a strong influence in any relationship. Prior interactions in this regard were considered pivotal, providing the foundations for responding to negative events, and resolving issues when they inevitably arose. In the same way, future decisions, attitudes, and behaviours, along with the propensity for either party to accept risk in the future, were driven by past experiences.

The allocation of risk was considered to be significant, and in instances where it was perceived that risk was poorly apportioned, relationships were damaged, with diminished trust levels the result. The design and implementation of the control mechanism itself was integral in this regard, with onerous and excessive controls (Gad and Shane, 2014), or a contractually aggressive approach, deemed detrimental. To this end, a mutually beneficial and partnered approach was considered more conducive to developing and maintaining good relationships, and achieving ultimate project success. Furthermore, strong relationships and high levels of trust were shown to reduce the need for contractual control (Gad and Shane, 2014), and hence provided an effective means of managing project risks.

Despite the influence of the respective control mechanism, and irrespective of a traditional or relational procurement environment, individual personalities were shown to be a significant determinant of project relationships. Attitudes founded on past experiences, along with demonstrated actions and behaviours were shown to be the ultimate determinant of relationships, trust, and project success. This reinforces the importance of trading partner selection during the initial stages of any project. While contextual project specifics, along with the underlying principles of either procurement mechanism, will indeed place pressures (both positive and negative) on stakeholder relationships, sub optimal outcomes could be avoided via careful project team member selection. To this end, positive outcomes could be realized if individual attitudes, actions, and behaviours demonstrate a willingness to prioritize overall project interests above individual interests. The converse is also true, with a prioritization of individual interests particularly damaging to relationships and trust in either procurement mechanism.
The pair wise comparison has ultimately confirmed that the influence of human trust variables within traditional and relational procurement environments is for the most part comparative. While the fundamentals of a transactional approach can inherently be at odds with good relationships and trust, positive outcomes in this regard can still be realized depending on the individuals involved. Likewise, despite the fundamentals of relational procurement aiming to create an environment which is conducive to good relationships, and high levels of trust, this is not a given. Again, it comes down to the individuals involved, and how they chose to behave and interact in response to the contextual specifics influencing any project setting.

**Attribution variables**

In both procurement environments, the inter-related nature of the various trust building mechanisms was widely evident (Lander et al., 2004), with the perceived level of trustworthiness between project participants determined to a large degree by their respective characteristics and actions (She, 2013). To this end, behaviours, and attitudes that actively displayed reliability, competence, and a willingness for open communication were shown to have a positive influence on trust, and eventual project outcomes. Personal character traits of benevolence, honesty and integrity were also highly regarded, and ultimately demonstrated a willingness to act in the best interests of another party (McLain and Hackman, 1995). In instances in which non-trustworthy behaviour was displayed, immediate and often long lasting damage to stakeholder relationships was the result. Future decisions and behaviours were hence forth based on the memory of any trust violation in this regard (Kim et al., 2004), with a party's willingness to engage in future relationships and/or projects strongly determined by past experiences.

The influence of attribution variables on trust and eventual project outcomes was therefore comparative between transactional and relational procurement environments. To this end, the actions, behaviours, and attitudes of individual project participants was again critical, irrespective of the chosen procurement mechanism. The transactional fundamentals of a traditional contract were not shown to be an insurmountable obstacle to strong relationships and high levels of trust. With transactional trading partners often choosing to adopt a partnering approach to contractual issues, despite opportunities to the contrary, the benefits of trustworthiness in this regard were subsequently acknowledged. Similarly, the positive influence of trustworthy behaviour was also evident within a relational environment.
However, despite the underlying collaborative principles of a relational contract, the potential for poor relationships and lost trust remained ever real, with eventual project outcomes ultimately determined by the actions of the individuals involved, albeit with influence from contextual specifics.

While the actions of individual stakeholders were shown to be commonly and critically significant, the contextual specifics and fundamental principles of the chosen procurement mechanism were none the less influential, in terms of stakeholder behaviour and the subsequent attribution variables of trust. To this end, given the transactional nature of a traditional procurement environment, project participants were not contractually encouraged to adopt a mutually beneficial approach, in which aligned goals, collaboration and a benevolent attitude would foster strong relationships and trust. Hence, the importance of the attribution variables that influence trust are arguably more significant within a traditional procurement environment, as project individuals must actively and benevolently pursue positive outcomes in this regard. In contrast, the mandated framework of collaboration within a relational procurement mechanism does aim to encourage such behaviour, albeit without any guarantees. When interacting within the contextual framework of any RC project, the actions of project individuals ultimately determine outcomes in this regard, and non-trusting behaviour such as excessive control, poor communication, and adversarial interactions were still prevalent within projects procured under a relational contracting environment.

The pair wise comparison has ultimately confirmed the comparable influence of attribution trust variables in both traditional and relational procurement environments. Notwithstanding the contextual influences synonymous with the respective procurement mechanism, attributes ascribed to project individuals were shown to be similarly influential in terms of trust and eventual project outcomes.

**Contextual variables**

With consideration to the human and attribution variables mentioned previously influencing trust in both traditional and relational procurement environments, the importance of project individuals, and their respective attitudes, actions and behaviours was universally apparent. However, these attitudes, actions and behaviours were shown to be unavoidable influenced by context. To this end, the contextual variables of any project are significant. While many
commonalities were evident, several differences were also apparent, with the inherent principles of the chosen procurement mechanism influential in this regard.

In terms of eventual project outcomes, team environment was shown to be important in both procurement mechanisms, with the influence of trust widely acknowledged (Gad and Shane, 2014). Attitudes founded on collaboration and cooperation were considered desirable, with open communication, shared values, trustworthiness (integrity, honesty, benevolence, competence, reliability) and strong, empowered leadership, shown to facilitate a positive team culture and ultimate project success (Pinto, Slevin and English, 2008). With consideration to the divergent transactional imperatives that underpin respective traditional and relational procurement, the need to overcome an engrained adversarial mindset, and proactively strive for strong relationships and trust was particularly highlighted within a traditional procurement environment.

The unavoidable presence of risk (Schwalbe, 2004) was also widely evident in both procurement environments, with the link to trust and its dimensions similarly acknowledged (Gad and Shane, 2014). To this end, a balanced approach to risk apportionment was considered critically vital to the development and maintenance of relationships and trust in any project setting. Poor risk apportionment was found to be significantly damaging in this regard, resulting in adversarial relationships and reduced levels of trust. The acknowledgment of trust as a mitigatory of risk was also evident, with traits of benevolence and integrity highlighted in terms of striving for mutually beneficial outcomes. Future relationships, and subsequent decisions were also shown to be strongly dependant on resultant trust levels in any project, with the propensity for either party to accept risk in the future similarly influenced.

Within the context of a traditional procurement setting, compensation disproportionate to risk was found to be harmful to relationships and trust. An appropriately designed contract was hence considered essential, with flexible contractual arrangements beneficial in terms of the ongoing management of risk, and subsequent development and maintenance of stakeholder relationships and trust. Given the transactional fundamentals that underpin a traditional procurement mechanism, displays of benevolent behaviour despite contractual opportunities regarding risk was also shown to be particularly influential in terms of promoting trust amongst contracting parties.
Within the context of a relational procurement setting, the fundamental pain share, gain share approach to risk management was thought to be significant in terms of strong relationships and trust. However, the limited ability for individual parties to manage their own risk was at times detrimental, with feelings of resentment prevalent in this regard, ultimately leading to a break down in trust amongst relational partners.

In both procurement environments, the design and implementation of the respective control mechanism was shown to be significant in terms of managing project risk, with subsequent relationships and levels of trust strongly influenced in this regard (Guo, Lu and Song, 2013). To this end, the appropriate apportionment of risk in the first instance was again deemed to be critically significant, and a strong determinant of eventual project outcomes. Stakeholder behaviour was shown to be influenced by the way control mechanisms were designed and implemented, however, the individuals themselves, and their respective personalities and attitudes were considered of greater importance. For example, benevolent behaviour despite contractual opportunities was revealed to be a strong precursor for trust, while exploitive behaviour, and a demonstrated lack of integrity, benevolence or honesty was considered particularly damaging. Similarly, strong, collaborative relationships based on a mutually beneficial approach were considered to have a positive influence on trust, reducing the need for control. While excessive and strict control measures had the potential to foster mistrust (Gad and Shane, 2014).

Within the context of a traditional procurement setting, past experiences were shown to be a strong influence on relationships and trust, with the informal processes rather than the contract itself also highlighted in this regard. This again reinforces the idea that people and not contracts are key, and to this end, good relationships were often prioritized over contractual opportunities, resulting in improved project outcomes, founded on trust.

Within the context of a relational procurement setting, demonstrated transparency amongst the project team was considered desirable, with a shared purpose and collaborative environment encouraging the development of strong relationships, and trust. However, improved stakeholder relationships were by no means guaranteed, and in this regard, a dictatorial approach, onerous performance criteria, and perceptions of poor value for money were revealed to be detrimental.

The pair wise comparison has identified the contextual trust variables that influence both traditional and relational procurement environments. While project individuals were again
shown to be critically influential, context unavoidably prejudiced their respective actions, with the fundamental principles of the chosen procurement mechanism significant. However, contextual influences were not exclusively determined per procurement fundamentals, and both positive and negative outcomes were evident in both traditional and relational settings. Factors of greater significance have consequently been identified, with the apportionment of risk, and the attitudes and actions of project individuals decisive in this regard.

**Trust failure**

Experiences of trust failure were commonly acknowledged in both procurement environments, with comparable influences on eventual project outcomes evident. Given the complex nature of many construction endeavours, the potential for negative events, and subsequent reduced levels of trust remains ever real. To this end, strong relationships founded on past experiences were shown to be significantly important. When managing disagreements, a cooperative and collaborative attitude was shown to be crucial, with an informal approach to resolving issues, along with open and regular communication also significant. Numerous factors were shown to be detrimental to trust amongst project participants. Issues of risk apportionment were often central in this regard, and in instances of perceived unfair or inappropriate risk allocation, a negative re-assessment of trust levels was apparent, with future risk taking decisions unavoidably influenced. Adversarial attitudes were similarly influential, with negative personal characteristics (incompetence, dishonesty, unreliability) and behaviour which displayed a lack of integrity also shown to negatively impact trust, and eventual project outcomes.

Within the context of a traditional procurement environment, the importance of leadership and the management of relationships were highlighted, along with the harmful effect of self-interest, as opposed to the prioritization of overall project goals. The fundamental principles of this approach were shown to be significant in this regard, with the lack of mandated means for resolving disputes and responding to negative events shown to contribute to an environment in which reduced trust levels eventuate.

Within the context of a relational procurement environment, the contractual obligation to maintain relationships was shown to be beneficial in terms of mitigating the possibility of trust break down. However, high levels of trust were none the less not a guarantee, and excessive controls in the form of arduous key performance indicators, along with client value for money concerns, were shown to be damaging in this regard.
With instances of trust failure common, the requirement for trust repair was also highlighted within both procurement environments. To this end, the importance of communication was acknowledged, with an informal and face to face approach deemed to be more effective than a formal, contractual attitude. That is, personal and sensible communication is superior. Despite a widespread acknowledgment of the need to repair lost trust, there was no obvious understanding within either procurement environment regarding the intricacies of trust repair as opposed to initial trust building (Kim et al., 2004), nor the ongoing impact on trust of the significant information remaining from any trust violation (Slovic, 1993).

**Conclusions**

This study has recorded the gamut of trust-related experiences – both positive and negative – within the lived experience of construction practitioners. These have occurred in both transactionally- and relationally-based procurement environments. Given that experienced individuals from diverse enterprises related their experiences within the context of project teams, the influence of trust on project management practice within the construction industry has been exposed.

The importance of trust and its consequent benefits was widely acknowledged, though this remained largely intuitive rather than academically-based; thus, the intricacies of building and maintaining trust in a project environment, and how to repair it when things went wrong were largely unacknowledged. It is important to note that none of the questions related to trust within an individual firm, so its importance to the effective functioning of an enterprise remains a topic for further research.

There was widespread agreement amongst practitioners operating in both relational and transactional environments as to the benefits and perils of relying on trust to overcome contractual-based problems. This suggested that irrespective of the strictly legal constraints upon action and remedies available, certain practitioners would always have a propensity to expose themselves to heightened levels of risk in the hope or expectation of overcoming problems in projects. Conversely, others were very reluctant to engage in this type of behaviour. Together these groups confirmed that trust was not a prerequisite for relational contracting, nor did transactional procurement preclude its development during the life of the project.
This apparent paradox calls into question the mantra that relational contracts engender trust. The presence of risk is necessary for trust to be desirable; the absence of risk negates the reason for trust in the first place since negative consequences are now ruled out. Indeed it can be seen that the riskiest part of the relational procurement process occurs early on, when the nature of contract risks, their apportionment among the contracting parties, and the levels of reward and penalty for bearing them are determined. Thereafter performance-based risk is an entirely known quantity and commercial decisions can be taken as to the costs and benefits arising from inadequate risk management by each party, without affecting the other.

Transactional procurement can, given the right circumstances, engender heightened levels of risk exposure – particularly unforeseeable, latent risks – and hence the potential for trust to develop. Where good faith attempts to meet contractual requirements are evident in the face of major problems, clients may choose not to exercise the letter of their contract in terms of damages, or to grant extensions of time for completion before penalties are invoked. Under these circumstances a good working relationship between two highly placed decision-makers is critical to champion the cause of trust over expediency, in the expectation of long-term, superior project outcomes.

Of course, the very act of placing oneself in a vulnerable position through the exercise of trust in the expectation of a superior outcome introduces an unquantifiable risk of its own. i.e. that the superior outcome never eventuates. It is often said that everything has a price, but it appears that pricing the risk associated with employing trust is harder than most to quantify. Then again, the true benefits of trust – both quantifiable and intangible – can on occasion prove to be great. i.e. more than just the monetary value alone. It is interesting to speculate as to the extent of trusting behaviour within construction projects that would eventuate, if it was possible to quantify the intangible benefits – lower workforce stress, increased reputation, bigger order books. This is perhaps the most important – and the most difficult – question to answer, arising out of this research.

Ultimately this study has determined the influence of trust within a construction project setting, and consequently identifies the following for future research:

- Investigate and measure trust-related influences, and subsequent project performance, via quantitative testing of lived experience pertaining to trust;
• Examine the lack of proactive measures for trust development and maintenance within a transactional procurement framework, and the means required to establish an environment in which trust can flourish within this context;

• Investigate lived experience within a relational procurement context, regarding the counterintuitive principles of relational contracting in terms of the risk/trust nexus, and the diminished requirement for trust, because of the collective approach to risk apportionment;

• Investigate and compare project cost and trust performance outcomes between transactional and relational procurement alternatives;

• Investigate the means and measures by which a formalised environment that encourages and fosters trust can be established, with consideration given to the subsequent design of both transactional and relational procurement mechanisms.

References


Jones, D., 2000, Hong Kong, 21st and 22nd Nov.: Association for Project Management Hong Kong.


She, L., 2013, Reading, UK, 2-4 September 2013: Association of Researchers in Construction Management.


5 CONCLUSIONS AND IMPLICATIONS FOR FUTURE PM PRESCRIPTION AND PRACTICE

5.1 Introduction
Via the publications included in the previous chapter, the results of this research endeavour have been presented. With reference to the completed literature review, and the subsequent trust framework extracted from existing literature, the influence of trust on the prescription and practice of project management has been examined. In this regard, and within the context of a construction project environment, trust-related concepts and themes have been constructed and explained, by confirmatory reference to existing theory where possible, and highlighting potential theoretical contributions where this was not possible. With reference to the stated research question, aim and objectives, this concluding chapter will provide an overview of the outcomes of this research. Pertinent implications for future PM prescription and practice will be presented, with the contribution to the body of knowledge in terms of trust and its influence within a construction context subsequently exposed.
5.2 Research question

How does trust influence the prescription and practice of project management in construction projects?

The conceptualisation of this research problem has identified trust as a key factor in any construction endeavour. Hence, a failure to consider or understand the influence of trust and its dimensions has the potential to impact eventual project outcomes, and the stakeholder relationships and interactions upon which these outcomes are essentially reliant. Similarly, if project practitioners neglect or fail to appreciate the positive influence of trust, the delivery of any construction project is likely to be more difficult than it needs to be. By examining and exposing the intricacies of trust as presented in existing literature, this research has confirmed the current understanding regarding trust and its influence, while also extending the body of knowledge via the examination of existing trust theory within a construction-specific context. Ultimately, the prescription and practice of project management in construction projects will benefit from the recognition and understanding of trust that is the result of this research.

Given the process-driven fundamentals that drive project delivery, standards for project management best practice are widely accepted and utilised within the construction industry. It therefore stands to reason that any investigation of trust and its influence must examine the prescriptive intent mandated within accepted standards for project management. If such standards fail to adequately consider trust, or neglect mandated processes for building, maintaining and repairing lost trust, then it should be of little surprise that the potential benefits of trust are forfeited. Informed in this regard, the qualitative content analysis of PMBOK undertaken within this study has highlighted the need for further consideration of trust when prescribing best practice project management processes.

Furthermore, in spite of the prescriptive intent of PMBOK or accepted trust theory, the complex nature of any construction undertaking presents a myriad of variables which are likely to be pertinent in terms of trust and its influence. Hence, through examining the influence of trust on the practice of project management in construction projects, the phenomenological investigation of trust via the lived experience of construction practitioners will ultimately encourage future project participants to devote greater attention to the benefits of trust in project delivery.
5.3 Research aim and objectives

To explain how trust influences the prescription and practice of project management in construction projects.

In addressing the identified research question, this research has explained ultimately how trust influences the prescription and practice of project management in construction projects. To this end, an appropriate methodology was developed and implemented, encompassing the qualitative content analysis of PMBOK (Edition 4), along with an interview-based phenomenological investigation of trust via the lived experiences of practitioners. Central to the entire research undertaking was the trust framework that was developed from the comprehensive literature review included in Chapter Two. With a grounding in existing trust theory fundamental to the adopted methodology, a demonstrated level of rigour within the methodological process was evident, with the validity of research outcomes similarly enhanced.

Through the qualitative content analysis of PMBOK, this research has determined the influence of trust on the prescription of project management in construction projects. Via application of the developed trust framework to the data source that is PMBOK, trust-related concepts have been identified and explained, and an internationally recognised standard for project management best practice has been critiqued in terms of its recognition of trust and its influence.

Similarly, the phenomenological investigation of trust via the lived experiences of practitioners has identified the influence of trust on the practice of project management in construction projects. Existing trust theory has been confirmed, with additional factors pertaining to trust and its influence also highlighted within a construction context. To this end, the contextual specifics of transactional and relational procurement mechanisms have been considered within the context of trust, with outcomes in this regard calling into question the fundamental principles of the respective procurement alternatives.

The following sections summarise how this research has responded to the identified research objectives:

1. To construct a generic conceptual framework/model of trust, trust failure and trust repair.
2. To identify the theoretical influence of trust upon contract administration through procurement mechanisms.

3. To construct a methodology based upon a philosophical stance that regards the experience of trust within a construction project as an imperceptible phenomenon:
   a. traditional literature review (conceptual framework).
   b. content analysis - analysis of PMBOK (Etic perspective).
   c. phenomenological thematic analysis (Emic perspective):
      i. confirmatory (existence of previously identified themes);
      ii. open (identification of new themes).

4. To introduce and present six papers (six published).

5. To discuss and present conclusions based upon this study, including implications for future research.

5.4 Trust framework

The issue of trust is fundamental to all aspects of human interaction, and given the human component required to deliver any construction endeavour, trust and dimensions of trust are therefore significant. While much has been written regarding trust across numerous disciplines, any investigation of trust within a construction project management setting cannot ignore the contextual particulars that inherently govern and influence any construction environment. To this end, this research has developed a comprehensive and construction-specific framework of trust themes founded on existing literature. With consideration given to issues pertaining to developing and maintaining trust, as well as issues of trust failure and repair, the developed trust framework provides a valuable reference that will assist future project management prescription and practice.

While the developed trust framework has provided the methodological foundations upon which this research is founded, it also stands independently of the research, identifying the dimensions of trust relevant to the project management of construction projects.

5.5 Project management prescription

Project management principles are fundamental to the delivery of construction projects. To this end, accepted standards that prescribe project management best practice are a key driver for managing project tasks, resources and stakeholder actions. An investigation examining
the influence of trust within a construction project setting must therefore consider the prescriptive intent of such standards. Within the bounds of this research, The Project Management Body of Knowledge (PMBOK) is considered to be an internationally recognised standard that mandates how projects should be delivered. Hence, this research has utilised the developed trust framework to investigate PMBOK (Edition 4) via a content analysis methodology, in order to determine how trust influences the prescription of project management in construction projects.

While the developed trust framework clearly identifies the significant role of trust on project outcomes, PMBOK’s acknowledgement in this regard was limited to an implicit and general understanding only, often demonstrated via desirable characteristics amongst the project team. This lack of recognition of trust by PMBOK is therefore significant, with this research ultimately identifying a possible flaw in an accepted international standard for project management best practice. In this regard, if the prescriptive measures that define project management processes fail to understand and mandate how trust should be initiated, developed, maintained, and repaired when required, how can the subsequent practice of project management expect to realise the benefits of trust during project delivery? A greater understanding in this regard would therefore be beneficial, as would further attention within PMBOK regarding how project management processes can be mandated to take advantage of trust and its dimensions in order to achieve improved project outcomes.

5.6 Project Management practice

5.6.1 Transactional procurement
Trust was found to form an integral part of stakeholder experiences in the delivery of projects procured under a transactional (traditional) procurement framework. Both good and bad relationships were evident, with trust and dimensions of trust, deemed to be a powerful driver in this regard. The transactional exchange and eventual project performance under a traditional procurement mechanism was ultimately found to be influenced significantly by trust. Yet despite trust being at the core of successful project outcomes under a traditional mechanism, there was found to be little evidence of any proactive measures to develop and maintain trust. A greater comprehension of why this is the case therefore needs to be investigated.
Given the inherently personal and humanistic nature of trust, it was not surprising that individual personalities, behaviours and actions pertaining to trust were deemed to influence eventual project outcomes. To this end, the initial attitudes of stakeholders, as well as past experiences, were shown to be significant. Hence, the development of trust during the initiation stage of any project is vital.

The link between communication and trust was clearly demonstrated amongst stakeholders operating under a traditional procurement mechanism. Informal modes of communication and problem solving were particularly highlighted and regarded as positive, with personal attributes which displayed this approach deemed likely to contribute to project success. In spite of this, most stakeholders were unwilling to accept the increased risk that came with informality, and the default position was to refer to the contract, and act strictly in accordance with the relevant contractual clauses. The potential benefits of trust amongst trading partners were subsequently forfeited, and sub-optimal outcomes were the result.

The link between risk and trust was similarly evident within traditionally procured projects, and the appropriate allocation, identification and management of risk was found to be critical. However, while the link between risk and trust was confirmed, the allocation of risk in the first instance was found to be of greater importance. That is, when any party perceived that a poorly disclosed or unfair risk had being passed on to them, a level of resentment was evident, and trust levels ultimately decreased to the detriment of project outcomes. The potential for contractual disputes in these instances was also apparent.

Given the fundamental principles of traditional procurement mechanisms, and also the complex nature of any construction endeavour, the potential for negative events and a subsequent breakdown in trust is ever present, and was widely acknowledged. In this regard, strong relationships and trust were considered of value when responding to negative events and resolving disputes, with poor relationships and distrust shown to facilitate poor project performance. Nonetheless, an understanding regarding antecedents that led to poor relationships and distrust was not evident. Similarly, there was no recognition concerning the importance of repairing lost trust, or the mechanisms that should be employed in this regard.

5.6.2 Relational contracting procurement

Trust was found to form an integral part of stakeholder experiences in the delivery of relationally procured projects. Given the collaborative principles upon which relational
contracting (RC) procurement mechanisms are founded, as well as the pain-share, gain-share arrangements under which contracting parties operate, the influence of trust in this regard is significant.

Despite widespread acknowledgement of the relevance of trust dimensions within the delivery of relationally procured projects, strategies for trust building, maintenance, and repair were absent. Situations and experiences that demonstrated the centrality of trust-related issues were commonplace. However, while there was an implicit desirability for a more cooperative approach when responding to negative events, the default position often remained founded on an adversarial mindset, in spite of an explicit understanding that alternatives would result in improved project outcomes.

In aiming to assemble a project team to operate under a relational procurement mechanism, the relative skills and attributes of individual stakeholders were shown to be important. To this end, elements that were identified as being critical to eventual project outcomes included excellent communication skills, technical competence, integrity, benevolence, fairness and honesty.

Issues pertaining to risk in projects procured under relational mechanisms were also widely acknowledged. Risk identification, quantification and subsequent apportionment were thought to be inherently challenging, and had the potential to derail a project and the relationships operating within it. To this end, in instances where perceived underhand decision-making and risk apportionment was evident, stakeholder relationships were damaged, with trust levels similarly affected. Risk associated issues were thought to be paramount during the initial stages of any project, and the resulting levels of trust (either positive or negative) had a significant bearing on eventual project outcomes. Where trust was established from the outset, a united purpose and a collaborative approach to problem solving tended to follow, with enhanced project outcomes subsequently achieved.

In instances where trust did break down, there existed little evidence of any knowledge regarding trust repair techniques, and the intricacies involved in any trust repair effort. Familiar behaviours based on an adversarial approach to dispute resolution were again paramount in this regard, with this attitude often the customary response. The pre-existence of strong relationships was considered to be the most effective tool against this type of behaviour, which again reinforces the positive influence of trust in terms of eventual project outcomes.
5.6.3 Procurement generally
While stakeholder relationships operating in any construction endeavour are governed by procurement mechanisms, fundamental differences exist between the principles upon which traditional and relational procurement mechanisms are founded. With the tenets of traditional procurement seemingly at odds with the development of trust-based relationships, and relational procurement purported to be more conducive to, and reliant on, establishing and maintaining trust, divergent influences of trust could reasonably be expected. Yet many commonalities were found to exist regarding the experiences of trust, and its influence on eventual project outcomes, irrespective of the chosen procurement approach. Furthermore, the chosen procurement approach is deemed to be secondary to more influential factors; individual personalities; risk allocation. These will be discussed in greater detail in the ensuing section.

Irrespective of the adopted procurement approach, trust was considered to be a desirable characteristic within any project team. However, there existed a widespread absence of strategies for trust building, maintenance, or repair. A default to adversarial dispute resolution was often experienced in both procurement environments, with an absence of trust repair skills common. Similar traits were also considered to be desirable in trading partners. These included technical competence, honesty, fairness, integrity, benevolence, and willingness for open and honest communication. Interestingly, while recognition of these desirable traits was common, project team selection often remained poor in both traditionally and relationally procured projects. The potential for negative events and a resultant breakdown in trust were also ever present, and in both traditional and relational procurement, the pre-existence of strong and trusting relationships was considered to be an antidote to many project ills. Ultimately therefore, greater attention and consideration to the influence of trust on project outcomes would be universally beneficial, irrespective of which procurement mechanism is chosen on any given project.

5.7 Implications for project management prescription and practice
In examining and explaining the influence of trust on the prescription and practice of project management in construction projects, this research has identified a number of key issues that are considered to be significant, as presented here in.
5.7.1 Trust framework
While the importance of trust itself is logically apparent, the construction industry often appears to operate in an environment in which trust and its influence is scarcely considered. Furthermore, with construction projects historically marred in many instances by disputes, conflict, and sub-optimum outcomes, the need for greater recognition of trust and its benefits needs to be acknowledged. To this end, any issues resulting from a lack of trust need not be surprising given that for the most part accepted project management prescription and practice fails to actively pursue or maintain trust amongst project partners, nor does it demonstrate any understanding of the intricacies of repairing lost trust when the need arises. In the same way, past research has similarly neglected trust as a driver for project outcomes. The developed trust framework will ultimately go some way to rectifying this failing. Given its grounding in existing literature, applied within a construction specific context, the developed trust framework provides a valuable reference in terms of identifying key dimensions of trust. In practice, the framework could be utilised as a tool for educating all members of a project team, while also providing a spring board for future research efforts.

5.7.2 Project management prescription
The abstract nature of trust, trust building and trust repair amongst project individuals is seemingly at odds with the action-to-outcome nexus upon which project management processes are inherently founded. That is, given that the prescribed processes for project management are unavoidably required to cater to the reactive attitudes and actions of project individuals, the ability of a standard such as PMBOK to effectively and explicitly mandate trusting behaviours is fundamentally difficult. Nonetheless, a greater understanding regarding the benefits of trust should still be promoted. Similarly, processes for the development, maintenance and repair of lost trust should also be included in the routine processes that form part of the project manager’s tool kit.

Ultimately, any standard that defines project management processes can only be designed on the basis that project stakeholders will act rationally in pursuit of common project goals. However, stakeholder actions when implementing the defined project management processes are unavoidably influenced by the personal experiences, biases and prejudices acquired during their working lives. The level of rationality that applies to stakeholder behaviour is therefore limited in this regard. Hence to blindly implement prescribed project management processes is not enough, but rather stakeholders, including project managers, must aim to
foster trust within a project team, and subsequently strive to achieve successful project outcomes founded on trust and its dimensions.

For project management practitioners to rely on PMBOK as the ideal prescription for project management best practice is therefore potentially problematic. At best, opportunities for improved project outcomes may be lost if trust and its dimensions are not understood and embraced. At worst, a blind implementation of prescribed project management processes that ignore trust and its influence may result in sub optimal project outcomes.

In striving to maximise the chances of project success, the disconnection between the process of project management (as mandated by PMBOK) and the practice of project management with regards to trust and its influence needs to be acknowledged and addressed.

5.7.3 Transactional procurement

With individual personalities, behaviours and actions pertaining to trust shown to influence project outcomes, a change of mindset in the trading partner selection process, whereby cost is the key driver, needs to be embraced. That is, factors of trust compatibility and consequent value delivery should guide a more focused approach to trading partner selection, rather than cost alone. Traits of honesty, competence, benevolence and trustworthiness would be critical in this regard. As would a demonstrated willingness to communicate openly, and adopt a cooperative approach to resolving issues when they eventuate. Ultimately, a greater emphasis on project team selection during the initial stages of any project would be beneficial in terms of realising the benefits of trust, and improving project performance.

In terms of the link between communication and trust, a reluctance to embrace informality in exchange for improved relationships based on trust is in essence not surprising, given that the fundamental principles of a traditional procurement mechanism are by design inherently discouraging in this regard. Mechanisms designed to embrace informality and consequently reduce contractual risk would therefore offer the potential for considerable benefit. To this end, prescriptive protocols for developing and maintaining trust, along with mandated procedures for informal communication, particularly when responding to negative events, would be advantageous.

With the link between risk and trust clearly evident, the management of risk is a significant driver for trust-based relationships and ultimate project outcomes. Hence it is vital that appropriate risk identification, allocation and ongoing management remains central to the
design and implementation of any traditional procurement mechanism. Greater attention is therefore warranted in this regard.

In terms of trust break down and repair, a lack of understanding in this regard appears indicative of a general acceptance of traditional contractual remedies, and a comfort in retreating to entrenched behaviours. It also may indicate a general undervaluing of trust as an effective tool in the pursuit of successful project outcomes. Hence, when responding to negative events, a greater appreciation of trust would be beneficial, as would a greater understanding regarding the consequences of lost trust, and the intricacies of trust repair.

By examining and explaining trust-related issues via the lived experiences of construction practitioners operating within traditionally procured projects, pertinent issues and potential shortcomings of this approach are similarly highlighted. A greater level of understanding regarding trust and its dimensions would therefore be valuable, in terms of both procurement mechanism design, as well as practical application.

5.7.4 Relational contracting procurement

Given the acknowledgment of trust-based fundamentals which underpin relational contracting procurement, an absent of strategies for trust building maintenance and repair, along with a prevalence for an adversarial rather than cooperative approach may suggest that in spite of the contractual arrangements in RC that in principle aim to foster collaborative relationships (and trust), the attitudes, actions and behaviours of individual stakeholders remain central to outcomes in this regard. To this end, past experiences, which may have historically favoured an adversarial approach, are likely to be significant. Accordingly, while the hard contractual elements of RC are indeed important, the ‘soft’ human elements (of which trust is key) ultimately still influence eventual project outcomes. Hence a greater appreciation and understanding in this regard would be beneficial in terms of the contractual design of any relational contracting mechanism, as well as its ongoing application. A dedicated effort to educate stakeholders regarding the benefits of trust would also be valuable, particularly in instances where past experiences are predominantly founded in a traditional procurement environment, in which an adversarial mindset may have been routine and expected.

A greater awareness of and comfort with trust-related concepts generally, as well as a sharpened understanding regarding the importance of trust development, maintenance and
repair would be highly beneficial in any RC environment. Approaches in this regard may include: personality profiling during project team member selection; management strategies during the project team establishment phase that aim to build relationships and trust; and transparency and honesty in project team communications.

The significant link between risk and trust within relational contracting procurement was widely acknowledged. Issues pertaining to risk must therefore be at the forefront of considerations during all stages of relationally procured projects, but particularly during project initiation, when relationships are most malleable and the potential for profiting from trust-based relationships is greatest. A failure to adequately identify and manage risk is likely to have a negative impact on eventual project outcomes, and undermine the collaborative, trust-based principles upon which RC mechanisms are purportedly founded. Hence a greater understanding of the resultant outcomes stemming from risk related issues, and the subsequent influence on trust and its dimensions is necessary.

With a lack of understanding regarding trust repair techniques common, greater attention and understanding in this regard is necessary. With negative events and the potential for trust break down ever real, a failure to understand and actively pursue trust-based solutions when faced with negative events is likely to be to the detriment of eventual project outcomes. Hence, entrenched adversarial behaviours are again considered to be significant, and must be overcome. To this end, RC mechanisms must move beyond theoretical principles of collaboration, and actively pursue measures for repairing lost trust when the need arises. Ultimately, a greater appreciation on the part of all stakeholders regarding the intricacies of trust repair would be of significant value.

In light of the mostly implicit recognition of trust and its dimensions within a relational contracting environment, education of project managers and all other stakeholders is warranted, and could realise improvements to current practice.

5.7.4.1 The risk/trust nexus

With regards to the risk/trust nexus in RC, the fundamental principles of this approach were found to be significant, in terms of trust and its influence. These principles aim to facilitate the development and maintenance of strong relationships by encouraging themes of collaboration, competence, communication, and, ultimately, trust during project delivery. However, while these trust dimensions may indeed be fostered amongst relational partners, the specific manner in which risk is managed under the pain-share, gain-share arrangement
actually diminishes the requirement for trust. That is, although seemingly counterintuitive, the inherent certainty of risk apportionment and reward under relational contracting conditions is likely to negate the requirement for trust altogether once risk allocation has been negotiated. Furthermore, in instances where there is a perceived disproportional risk distribution, feelings of misplaced trust prevail.

Trust cannot exist independently of risk, and hence, given that parties in RC are sharing risks collectively rather than accepting risk individually, the requirement to embrace trust and its dimensions is potentially negated. Hence, in spite of fundamental principles that should be conducive to trust, the full benefits of trust and trusting relationships may be unintentionally hindered within a RC environment. A deeper level of understanding regarding the intricacies of the relationship between risk and trust in any RC mechanism would therefore be beneficial.

This risk/trust conundrum consequently raises some interesting propositions regarding the precepts upon which RC mechanisms are designed and implemented. The total project cost is particularly interesting in this regard. In contrast to a traditional procurement approach founded on a competitive bid process, trading partners are selected before the target cost for the project is defined. Relationships and trust between prospective partners would logically play a part in this process. Following the selection of trading partners, the contractual arrangements in an RC are negotiated between the respective stakeholders, inclusive of the total outcome cost (TOC), and agreed compensation model. It is at this stage of the project cycle where the concept of trust is critically significant. Negotiations would include details of scope, cost, and time, as well as the identification of any pertinent risks. In undertaking these negotiations, a degree of trust is inherently required from all parties. The client must trust that the contractor is undertaking the negotiations in good faith, and is striving for realistic and cost effective solutions regarding the project delivery. However, the commercial reality of an RC mechanism would see the contractor’s interest vested in negotiating the highest TOC possible. Hence, as the contractor is guaranteed to be paid the direct costs for the project, inclusive of overheads, the client is accepting a greater share of the risk in this regard. The Contractor’s risk is limited to their agreed corporate overheads and profit as defined in the compensation model, which again provides some level of motivation to negotiate an inflated TOC. The contractor must trust that they are sufficiently informed regarding the project scope, and hence are able to negotiate a TOC with which they are
comfortable, and which covers their risk exposure in terms of possibly forfeiting their profit should the project come in over budget. The Contractor must also trust that the client is acting in good faith throughout the negotiation process. Consequently, trust plays a critical role when establishing any RC, and in this regard, prior experiences, and strong relationships founded on trust, are significant in terms of eventual project outcomes. Furthermore, during this negotiation process, commercial realities will ensure that, to some degree, the respective parties will ensure that their own interests are protected, with a potential for reduced levels of trust in this regard a constant possibility.

The influence of trust during the establishment stage of any RC is therefore likely to be important, particularly given that such negotiations are undertaken at an organisational level. While individuals are obviously involved in the negotiation process, the trust is essentially between business entities, rather than on a personal basis. However, on execution of the RC deed, it is the project individuals themselves, and their own personal experiences, attitudes and behaviours that determine relationships and ultimately trust between stakeholders. Hence, it is significant to consider how this scenario aligns with principles of collaboration, competence, communication, and ultimately trust upon which relationally procured projects are purported to be founded. Are individuals in reality emboldened to behave in a manner that encourages and fosters trust? Or, are they afforded a level of comfort as a result of the risk apportionment that has been negotiated under the relational procurement mechanism, in terms of reduced risk levels, and therefore have a diminished requirement for trust? Further research in this regard is warranted, and a greater level of understanding regarding the complex risk/trust nexus in relationally procured projects would be beneficial.

5.7.4.2 Cost of relational contracting
Given that a relational contract is fundamentally designed to facilitate improved relationships and enhanced levels of trust, it is somewhat significant if indeed this is not the case. The negotiated outcome of any RC essentially ensures that the client forfeits the hard dollar, competitive tender benefits which are inherent in a traditional procurement approach. Therefore, in terms of cost, is the client getting value for money, given the potential for higher costs as a result of the non-competitive process of negotiation? This additional cost may be considered acceptable if the project is delivered successfully, on time, and within a collaborative environment. However, it is pertinent to question whether or not this approach is worth it? Or could similar outcomes be achieved at a reduced cost, if an appropriately
designed traditional procurement mechanism was used, which gave greater consideration to an improved acknowledgement and understanding regarding the influence of trust? That is, careful trading partner selection, appropriate risk identification and apportionment, and proactive measures for building, maintaining and repairing trust.

5.7.5 Procurement generally
In considering the influence of trust within the contextual specifics of traditional or relational procurement alternatives, more significant factors than procurement mechanism have been highlighted: individual personalities; and risk allocation.

While the contractual specifics of any procurement mechanism set the boundaries within which contracting parties must operate, it is the individuals themselves, along with their attitudes, actions and behaviours that have a greater influence over stakeholder relationships, trust, and eventual project outcomes. Both good and bad relationship can exist under either procurement alternative, with the influence of trust and dimensions of trust founded not on the respective contractual arrangements, but rather on how individual stakeholders choose to conduct themselves within such arrangements. To this end, the findings of this research demonstrate that irrespective of procurement mechanism or contractual control, certain practitioners will display a willingness to expose themselves to risk when resolving project issues, while others remain reluctant to engage in this type of behaviour. Consequently, these groups have confirmed that trust is not a necessary prerequisite for relational contracting, nor does transactional procurement prohibit its development during the life of a project. This again emphasises the need for a greater level of scrutiny when selecting trading partners and comprising a project team. Furthermore, while it is clearly not possible to mandate or formalise trusting behaviours and beliefs upon any individual, more attention should also be given to understanding the nature of a formalised environment within which such behaviours are encouraged and can flourish.

With regards to risk, the selected procurement mechanism again defines the contractual arrangements under which the project operates. However, it is the allocation of risk itself, rather than the respective procurement mechanism that has a greater influence over relationships, trust and ultimate project outcomes. Providing that risks are appropriately identified, clearly articulated, and definitively allocated to the party in the best position to deal with them, good relationships and high levels of trust can be fostered under both
traditional and relational procurement mechanisms. The converse is also true in that a poor apportionment of risk under either procurement option will be detrimental to trust, and lead to sub-optimal project outcomes. That is, when risk is allocated to a party with a limited ability to effectively manage it, adversarial interactions and diminished levels of trust can be the result. The respective project risks should therefore be the primary consideration when developing the procurement mechanism (either transactional or relational), and defining the contractual intent. To this end, the contractual intent must fully appreciate the intricacies of the risk/trust nexus as it applies to any given project. Ultimately, risk apportionment needs to be driven by the overall interests of the project, and common ground must be found between appropriate risk allocation and the development of trusting stakeholder relationships.

5.8 Implications for future research
This research has ultimately examined and explained the ontology of trust as it exists within the context of project management prescription and practice in construction projects. In doing so, it has also identified a number of key factors worthy of further research.

5.8.1 Project management prescription
In terms of the prescriptive intent of PMBOK, the limited extent to which it considers trust as a key driver for project performance is significant. Further research is warranted in this regard, and should aim to:

1. Investigate how project management processes can prescribe routine measures pertaining to the initiation, development and maintenance of trust, as well as the repair of lost trust;
2. Investigate the linear approach to project management prescription, and the lack of consideration afforded to the human element of project delivery, of which trust is key.

5.8.2 Project management practice
In terms of project management practice, the influence of trust on project performance and eventual project outcomes is evident. Further research is warranted in this regard, and should aim to:

1. Investigate and measure trust-related influences, and subsequent project performance, via quantitative testing of lived experience pertaining to trust;
2. Examine the lack of proactive measures for trust development and maintenance within a transactional procurement framework, and the means required to establish an environment in which trust can flourish within this context;

3. Investigate lived experience within a relational procurement context, regarding the counterintuitive principles of relational contracting in terms of the risk/trust nexus, and the diminished requirement for trust, as a result of the collective approach to risk apportionment;

4. Investigate and compare project cost and trust performance outcomes between transactional and relational procurement alternatives;

5. Investigate the means and measures by which a formalised environment that encourages and fosters trust can be established, with consideration given to the subsequent design of both transactional and relational procurement mechanisms.

5.9 Conclusion
This dissertation has conceptualised a research problem, and subsequently described the theoretical foundations, research design, and successful implementation of the developed methodology in order to shed light on the influence of trust on the prescription and practice of project management in construction projects. Via each of the publications central to this research, the results stemming from the rigorous application of the developed methodology have been presented, and thus the research aims and objectives have been fulfilled, and the research question ultimately answered.
6 References


Department of Computer Sciences-University of Calgary. Available:


BOYCE, C. & NEALE, P. 2006. Conducting In-Depth Interview: a guide for designing and conducting In-Depth Interviews for evaluation input. Pathfinder International Tool Series, monitoring and evaluation – 2, USA.


GAD, G. & SHANE, J. 2014. Trust in the construction industry: A literature review. In: CASTRO-
LACOUTURE, D., IRIZARRY, J. & ASHURI, B. (eds.) Construction Research Congress 2014:
Construction in a global network. Atlanta, Georgia: American Society of Civil Engineers.
GAJENDRAN, T. & BREWER, G. 2012. Collaboration in public sector projects: unearthing the
contextual challenges posed in project environments. Engineering Project Organization
Journal, 2, 112-126.
GAJENDRAN, T., BREWER, G., JEFFERIES, M. & STRAHORN, S. 2013. An evaluation of philosophical
disposition and operational reality of alliances; The risk-trust perspective. RICS COBRA 2013.
Proceedings of RICS COBRA 2013. New Delhi, India.
GEANELLOS, R. 2000. Exploring Ricoeur’s hermeneutic theory of interpretation as a method of
analyzing research texts. Nursing Inquiry, 7, 112-119.
DAVIS, K. E. (eds.) The social construction of the person. New York: Springer.
GILLESPIE, N. & DIETZ, G. 2009. Trust repair after an organisational level failure. Academy of
of Phenomenological Psychology, 25, 190-220.
GIOV, A. 1997. The theory, practice and evaluation of the phenomenological method as a
423-433.
GOLAFSHANI, N. 2003. Understanding reliability and validity in qualitative research. The Qualitative
and breaking cooperative relations. New York: Blackwell.
GOULDING, C. 2005. Grounded theory, ethnography and phenomenology: A comparative analysis of
three qualitative strategies for marketing research. European Journal of Marketing, 39, 294-
308.
GRAEN, G. B. & UHL-BIEN, M. 1995. Relationship-based approach to leadership: Development of
leader-member exchange (LMX) theory of leadership over 25 years: Applying a multi-level
186.
GUO, S., LU, P. & SONG, Y. 2013. The Effects of Trust and Contractual Mechanism on Working
Relationships—An Empirical Study in Engineering Construction Projects. American Journal of
Industrial and Business Management, 3, 539.
In: FISHER, C. T. (ed.) Qualitative Research Methods for Psychology: Introduction through
Routledge.


HARTMAN, F. T. The role of trust in project management. PMI Research Conference, 1999.


Husserl, E. 1917. Pure Phenomenology, its Method and its Field of Investigation (Jordan R.W. transl.). Inaugural Lecture at University of Freiburg.


LECHLER, T. 1998. When it comes to project management, it’s the people that matter: an empirical analysis of project management in Germany. *In: HARTMAN, F., JERGESA, G. & THOMAS, J. (eds.) IRNOP III. The nature and role of projects in the next 20 years: research issues and problems: Calgary.*


OLSEN, W. 2004. Triangulation in social research: qualitative and quantitative methods can really be mixed. Developments in sociology, 20, 103-118.


REINERS, G. M. 2012. Understanding the differences between Husserl’s (Descriptive) and Heidegger’s (Interpretive) Phenomenological Research. *Journal of Nursing and Care,* 1.


7 APPENDICES

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APPENDIX 1- TRUST FRAMEWORK (CODE LIST FROM LITERATURE)
<table>
<thead>
<tr>
<th>Main theme codes</th>
<th>Theme detail codes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HUMAN VARIABLES</strong></td>
<td><strong>Relationships, trust and the project environment</strong></td>
</tr>
<tr>
<td>The presence of a relationship is an indispensable condition required for trust to develop (Deutsch, 1958, Rosseau et al., 1998, Schoorman et al., 2007);</td>
<td></td>
</tr>
<tr>
<td>Project success is determined by the trust which reinforces the relationships of the critical stakeholders (Pinto et al., 2008, Che Ibrahim et al., 2011, Gad and Shane, 2014, Meng, 2012, Wong et al., 2008, Cheung et al., 2015, Gajendran et al., 2013);</td>
<td></td>
</tr>
<tr>
<td>The ongoing interactions within a relationship are a key determinant of trust (Mayer et al., 1995, Tomlinson and Mayer, 2009, Weiner, 1986, Che Ibrahim et al., 2011, She, 2013, Ceric, 2014, Schoorman et al., 2007, Buvik and Rolfsen, 2015, Gajendran and Brewer, 2012);</td>
<td></td>
</tr>
<tr>
<td>Trust will facilitate cooperative relationships, which allow the exchange of information through the effective interaction of the project team (Misztal, 1996, Che Ibrahim et al., 2011, Gad and Shane, 2014, Ajmal et al., 2012);</td>
<td></td>
</tr>
<tr>
<td>In a project environment, trust must be developed from a low base to a high base, in order to achieve well functioning relationships (Karlsen et al., 2008, Atkinson et al., 2006, Guo et al., 2013, Kai Lu and Yan, 2016);</td>
<td></td>
</tr>
<tr>
<td>Uncertainties resulting from the unique nature of a project, add to the challenge of establishing team work and coordination in project relationships (Karlsen et al., 2008, Soderlund, 2010);</td>
<td></td>
</tr>
<tr>
<td>Trust is dependant on both parties, and must be mutual (Chow et al., 2012, Romahn and Hartman,</td>
<td></td>
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</tbody>
</table>
Project stakeholders must demonstrate reciprocal trust in order to fully realise the benefits of a trust based relationship (Sward, 2016, Ajmal et al., 2012);
Time is the defining feature in any relationship (Karlsen et al., 2008, Schoorman et al., 2007).

Relationship interactions and trust

<table>
<thead>
<tr>
<th>Relationship interactions and trust</th>
<th>Attributional dispositions affect the development of trust (Ferrin and Dirks, 2003, Gajendran et al., 2013, Che Ibrahim et al., 2011, Gad and Shane, 2014, Buvik and Rolfsen, 2015); When interacting within a relationship, positive or negative experiences provide the basis upon which individuals form causal attributions (Che Ibrahim et al., 2011, Ceric, 2014), considered along dimensions of locus of causality, controllability, and stability (Weiner, 1986); Locus of causality- Distinguishing between causes internal or external to the trustee and apportioning blame accordingly (Tomlinson and Mayer, 2009); Controllability- The degree of control over the outcome and the subsequent level of accountability for any negative outcome (Tomlinson and Mayer, 2009); Stability- The perceived variability of the cause and the subsequent indication of future outcomes under similar circumstances (Tomlinson and Mayer, 2009); The outcomes from this dimensional analysis initiate future expectations and emotional responses (Tomlinson and Mayer, 2009); This evaluation process facilitates the updating of trust and determines the propensity of either party to take risk (Mayer et al., 1995, Schoorman et al., 2007).</th>
</tr>
</thead>
<tbody>
<tr>
<td>The initial intent of</td>
<td>The outcomes of any project are influenced by the initial intent and expectations of the parties involved (Munns, 1995, Gad and Shane, 2014);</td>
</tr>
<tr>
<td>Contextual Variables</td>
<td></td>
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<td>------------------------------------------</td>
<td>------------------------------------------------------------------</td>
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<tr>
<td>Risk, vulnerability and uncertainty</td>
<td>Risk must be present in order for trust to arise (Deutsch, 1958, Das and Teng, 1998, Ceric, 2014); Trust can not transpire without one party accepting a degree of risk (Chow et al., 2012, Schoorman et al., 2007);</td>
</tr>
</tbody>
</table>

An initial non-trusting intent will be detrimental to project success (Munns, 1995); Non-trusting intent may be characterised by poor communication, and a restriction of information, or by an unwillingness to share decision making or delegate control. This can lead to scenarios in which individual actions are motivated by self interest, which subsequently hinders the development of trust (Munns, 1995, Whitener et al., 1998); The initial project environment is outside the control of the project’s participants (Munns, 1995); In situations where the initial project environment is not conducive to the natural development of trust, all stakeholders must attempt to reverse the reciprocal nature of a relationship, in which mistrust is reciprocated with a further lack of trust (Munns, 1995); A pre-emptive display of trustworthy behaviour in the initial stages of an exchange relationship is not without risk, however the potential benefits of trust may be lost if the alternate option of imposing tight controls and closely monitoring behaviour is adopted (Whitener et al., 1998); In relationships where there exists no evidence to the contrary, the natural pre-disposition to trust (McKnight et al., 1998) is of significance to all project participants when evaluating and responding to the initial intent of others within the project team (Gad and Shane, 2014).
Potential benefits will be forfeited if one party makes the decision not to trust (Romahn and Hartman, 1999, Gad and Shane, 2014);
Uncertainty and risk are inevitable in a project environment (Schwalbe, 2004, Lau and Rowlinson, 2011);
Trust helps to reinforce an individual’s positive motivation for the overall objectives of a project (Wong et al., 2008);
Trust ultimately helps to overcome risk and uncertainty (Gad and Shane, 2014, Schoorman et al., 2007, Smyth et al., 2010).

| Control mechanisms | Control risk, mitigate uncertainty, and protect stakeholder vulnerability (Schoorman et al., 2007, Guo et al., 2013);
Trust is facilitated through fear of penalty for non-performance;
The fulfilment of control requirements, subsequently activates trust (Wong et al., 2008, Guo et al., 2013, Kai Lu and Yan, 2016, Lau and Rowlinson, 2011);
Excessive control mechanisms can be counterproductive to the development of trust, and can be interpreted as a sign of distrust (Pinto et al., 2008, Gad and Shane, 2014, Schoorman et al., 2007, Guo et al., 2013, Pablo et al., 2016, Lau and Rowlinson, 2011);
Trust is the key to reducing the need for control, as parties are able to operate without fear of exploitation (Aubert and Kelsey, 2000, Gad and Shane, 2014, Schoorman et al., 2007, Guo et al., 2013, Poppo and Zenger, 2002, Suprapto et al., 2015). |
| Team environment | Trust is crucial to maintaining a positive team environment (Che Ibrahim et al., 2011, Crisp and Jarvenpaa, 2000, Delisle, 2004, Gad and Shane, 2014, Suprapto et al., 2015, Shiu et al., 2014); |
All project participants play a role in the development and maintenance of culture within the project team;
A healthy team environment will have a positive influence on all themes and dimensions of trust (Che Ibrahim et al., 2011, Suprapto et al., 2015);
Trust is important across hierarchical levels and between respective organisational departments (Pinto and Slevin, 1987, Shiu et al., 2014).

| Trust and project outcomes | Trust is the most significant determinant of project success (Pinto et al., 2008, Gad and Shane, 2014);
Trust is vital to facilitating cooperative processes in the project environment (Che Ibrahim et al., 2011, Kramer, 1999, Wicks et al., 1999, Gad and Shane, 2014, Cheung et al., 2013, Wong et al., 2008, Cheung et al., 2015, Tai et al., 2016, Wang and Yin, 2013, Hasanzadeh et al., 2016, Ajmal et al., 2012);
Trust allows interaction without the need to consider hidden motives, or risks associated with disclosing information (Kadefors, 2004);
Through improving relationships, and maintaining cooperative partnerships, trust has a strong influence on project success (Pinto et al., 2008, Gad and Shane, 2014, Cheung et al., 2013, Wong et al., 2008, Guo et al., 2013, Challender et al., 2014, Wang and Yin, 2013, Hasanzadeh et al., 2016). |
<p>| Trust and the temporary nature of | The ability to develop long term trust in interpersonal relationships is hindered (Che Ibrahim et al., 2011, Munns, 1995, Soderlund, 2010, Buvik and Rolsen, 2015, Challender et al., 2014, Wang and Yin, 2013, Ajmal et al., 2012, Gajendran and Brewer, 2012); |</p>
<table>
<thead>
<tr>
<th>Trust and the unique nature of a project</th>
<th>The time available to build trust is limited to the timeframe in which the project must be completed (Hartman, 2002, Soderlund, 2010, Guo et al., 2013, Buvik and Rolfsen, 2015, Walker, 2009, Wang and Yin, 2013, Ajmal et al., 2012, Gajendran and Brewer, 2012); The establishment of trust is realised over a period of time which includes multiple interactions (Dervitsiotis, 2003); The project environment is not conducive to multiple interactions, and the importance of trust is subsequently increased (Atkinson et al., 2006); The development of trust during the initial stages of a relationship can be bolstered by a natural assumption to trust, providing there is no evidence to the contrary (McKnight et al., 1998); Individuals can display high levels of trust even in relationships without any prior history (Meyerson et al., 1996, Kai Lu and Yan, 2016); The importance of trust and attributes which facilitate trust should be given more credence given an understanding that the project environment may not naturally support the development of trust and trust-based relationships; An understanding that there is a natural assumption to trust is likely to be of relevance to the Project Manager during the start-up phase of any project.</th>
</tr>
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<tbody>
<tr>
<td>a project</td>
<td>Trust and the unique nature of a project</td>
</tr>
</tbody>
</table>
Trust and project management

Within the unique context of the project environment, it is apparent that the issue is not limited to trust itself, but to building of trust amongst project stakeholders (Gad and Shane, 2014);

Building trust is central to all aspects of project management, and the respective roles of all project participants (Karlsen et al., 2008, Che Ibrahim et al., 2011, Gad and Shane, 2014, Cheung et al., 2015)

Trust is a powerful asset for any organisation, and is considered to be “an essential element of project work” (Romahn and Hartman, 1999, p. 1);

If trust is developed amongst project stakeholders, the subsequent loyalty created can foster an environment in which stakeholders understand and trust the direction of the project and the organisation as a whole (Beslin and Reddin, 2004, Che Ibrahim et al., 2011).

### ATTRIBUTIONAL VARIABLES

| Trustworthiness | Means that one party is prepared to act in the best interests of another party (McLain and Hackman, 1995);
The characteristics and actions of a project stakeholder will determine the extent to which he or she is more or less trusted (Good, 1988, Johnson-George and Swap, 1982, She, 2013);
The various trust building mechanisms are mutually related to a high degree (Lander et al., 2004). |
| Reliable behaviour | Substantiating through action, what an individual has articulated with words, revealing to others whether or not what they say is consistent and dependable (Karlsen et al., 2008);
The behaviour of the respective parties within a relationship is significant in terms of the |
development of trust (Whitener et al., 1998, She, 2013, Gad and Shane, 2014, Ajmal et al., 2012);
Trust in a relationship is strengthened by behaviour that is predictable (Graen and Uhl-Bien, 1995, Ho and Weigelt, 2002, She, 2013, Gad and Shane, 2014);
Trust is reciprocal, and distrusting actions will be countered with a response which is distrustful (Karlsen et al., 2008);
Deceitful behaviour is considered to be especially disruptive of trust, and behaviour of this nature is likely to result in distrust (Lander et al., 2004);
Reliable behaviour allows project interactions to proceed with confidence, and ultimately contributes to a project environment that is conducive to the development of trust in stakeholder relationships.

<table>
<thead>
<tr>
<th>Communication</th>
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| The effectiveness of any project is strongly correlated to the quality of communication within the project environment (Che Ibrahim et al., 2011, Packendorff, 1995, Gad and Shane, 2014, Cheung et al., 2013);
Communication is described as well-timed, correct and appropriate information that is imperative for project success (Braendshoi, 2001);
Communication is the single most important trust building mechanism, facilitating information exchange, and enabling trusting relationships to be developed (Lander et al., 2004, Gajendran et al., 2013, She, 2013, Dainty et al., 2006, Dirks and Ferrin, 2001, Guo et al., 2013, Suprapto et al., 2015);
Correct and forthcoming information, clarification of decisions, and openness are all considered to be factors which facilitate perceptions of trustworthiness (Whitener et al., 1998, Che Ibrahim et al., |
2011);
Good communication is critical to project success, and will ultimately assist and encourage the
development of trust (Che Ibrahim et al., 2011, Doloi, 2009, Pinto et al., 2008, Wong et al., 2008,
She, 2013, Gad and Shane, 2014, Cheung et al., 2013, Das and Teng, 1998, Dainty et al., 2006,
Buvik and Rolfsen, 2015, Ceric, 2015, Ceric, 2016);
When negative interactions inevitably occur between a manager and his/her subordinates, blame is
less likely to be apportioned to the manager by the subordinate if the manager is seen to
demonstrate trustworthy behaviour in the form of communication (Korsgaard et al., 2002);
Trust can facilitate the exchange of information which is vital to effective and efficient
communication (Aubert and Kelsey, 2000, Che Ibrahim et al., 2011, Ajmal et al., 2012);
The need for open and accurate communications is logically significant, as project stakeholders are
required to work in a coordinated fashion in order to get things done (Che Ibrahim et al., 2011);
Good communication will help overcome problems resulting from a lack of familiarity amongst
project stakeholders;
Open communication is likely to help empower and motivate individual stakeholders to gel
together in such a way that the interests of the project are placed before the interests of the
individual (Che Ibrahim et al., 2011, Buvik and Rolfsen, 2015).

| Competence | Competence is a significant determinant of trust (Costigan et al., 1998, Karlsen et al., 2008, Lander et al., 2004, She, 2013, Gad and Shane, 2014, Schoorman et al., 2007, Shazi et al., 2015, Ajmal et al., 2012, Lau and Rowlinson, 2011);
The ability of the respective team members is an essential element of trustworthiness (Butler, |
| | 1991, Deutsch, 1958, Gabarro, 1978, Sitkin and Roth, 1993, She, 2013, Gad and Shane, 2014, Schoorman et al., 2007, Shazi et al., 2015; Competence trust - One party’s belief that another party is competent to undertake the allocated work (Hartman, 1999); Evidence of competence - Past experience, certification, reputation, job title, affiliation with a professional association. | Benevolence is described as one party’s belief that another party will act compassionately, and is considered a common characteristic of trust (Lamsa and Pucetaite, 2006, She, 2013, Schoorman et al., 2007, Ajmal et al., 2012, Lau and Rowlinson, 2011); Benevolence suggests an emotional attachment between a trustor and a trustee (Mayer et al., 1995), and is essentially concerned with relationships amongst members of the project team (She, 2013, Shazi et al., 2015); Benevolence may be revealed through emotive actions of friendliness, cooperativeness, cheerfulness and openness (Karlsen et al., 2008), with these actions increasing the propensity to trust; A trusting predisposition is likely to be developed, if one party is seen to offer assistance to another party, despite a lack of opportunity for extrinsic reward (Mayer et al., 1995, Schoorman et al., 2007). Behaviour that refrains from exploiting others to the advantage of one’s own interests is conducive to building trust (Whitener et al., 1998, Schoorman et al., 2007); When negative interactions inevitably occur between a manager and his/her subordinates, blame is |
| **Integrity** | Integrity concerns the trustor’s perception that the trustee will adhere to a set of principles which are acceptable to the trustor, with this perception implying a degree of reliability and dependability towards the trustee (Mayer et al., 1995);
Integrity is considered an antecedent to trust (Butler and Cantrell, 1984, Gabarro, 1978, Lieberman, 1981, She, 2013, Schoorman et al., 2007, Shazi et al., 2015, Ajmal et al., 2012, Lau and Rollinson, 2011);
Integrity trust has been described as a belief that one party will protect the welfare of another party (Hartman, 1999);
The extent to which actions concur with words, may be an indicator of a party’s level of integrity, as might the consistency of past behaviours displayed by the respective party (Mayer et al., 1995);
Trust is enhanced through attributions of truthfulness, integrity and honourable character forthcoming from a consistent correlation between words and actions (Whitener et al., 1998, She, 2013);
Relationships and attitudes within the project environment will be influenced by the level of integrity displayed by the respective parties (Schoorman et al., 2007, Shazi et al., 2015), including the words and actions of the project manager (Gajendran et al., 2013). |
| **Honesty** | Honesty implies that there will be no attempt to deceive, and is considered a personal characteristic related to objective credibility (Munns, 1995);
Sincerity has also been used to describe honesty, and is defined as “the degree to which people...
Forthright and truthful interactions amongst project stakeholders, in which promises are seen to be fulfilled, will positively impact on the development of trust (Hosmer, 1995, Humphrey and Schimtz, 1998, Karlsen et al., 2008, Lander et al., 2004, Gajendran and Brewer, 2012).

In a project environment, honesty may be displayed by sharing information openly, admitting mistakes, completing tasks as agreed, and acting at all times in a manner that portrays trustworthiness.

| TRUST FAILURE | Relationships between respective parties within a project team will be impacted by a negative event, and the subsequent breakdown of trust can have significant consequences (Lewicki and Bunker, 1996, Robinson, 1996);
During the interactions within a relationship, there is a potential for the positive expectations of either party to be violated, leading to a reduced trust and the need for trust repair (Kim et al., 2004);
Perceptions of ability, benevolence and/or integrity will be re-assessed and possibly downgraded in response to a negative outcome, however situational factors external to the trustee can in some instances be deemed responsible (Mayer et al., 1995);
The perceived reasons for a negative outcome will influence trust differently (Lewicki and Bunker, 1996, Sitkin and Roth, 1993), and the apparent cause determines the impact on the level of trustworthiness (Tomlinson and Mayer, 2009, Weiner, 2001); |
Negative outcomes that are perceived to be isolated and the result of variable circumstances, will have less of an effect on trust (Lewicki and Bunker, 1996, Sitkin and Roth, 1993), than outcomes that are ascribed to typical and context-specific behaviour where it is perceived, that under similar circumstances, the same results are likely in the future (Sitkin and Roth, 1993); The resultant level of trustworthiness will be determined by the extent to which a negative outcome is deemed to be due to factors which are internal, controllable and stable to the trustee (Tomlinson and Mayer, 2009, Weiner, 2001); Stability is considered to be the most influential factor, as an outcome attributed to a permanent cause is more likely to result in parallel outcomes in future situations and circumstances, whereas outcomes attributed to temporary causes leaves some scope for the outcome to be different (Weiner, 1986).

<table>
<thead>
<tr>
<th>Trust repair</th>
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<tbody>
<tr>
<td>Negative events within the project environment present a different scenario which is pertinent in terms of trust and trust repair; The natural assumption to trust (McKnight et al., 1998) is nullified when a trust violation occurs, meaning that the subsequent level of trust may fall below the original trust base. Any trust repair effort is therefore likely to require a greater effort than what was required to establish trust initially (Kim et al., 2006); Despite efforts by the mistrusted party to demonstrate trustworthiness, low levels of trust can be reinforced by the significant information pertaining to the violation which remains (Slovic, 1993); Trust repair must not only restore positive expectations in a relationship, but also overcome negative expectations. The trust repair process therefore differs from initial trust development</td>
</tr>
</tbody>
</table>
Trustworthiness factors and trust repair

| Positive outcomes will reinforce prior attitudes of trustworthiness and either maintain or strengthen the level of trust in a relationship (Mayer et al., 1995, Gajendran et al., 2013); Negative outcomes will lead to a re-evaluation of trustworthiness factors and a subsequent decline in the level of trust in a relationship (Mayer et al., 1995); Trust can be repaired by increasing the aspect of trustworthiness which has deteriorated (Tomlinson and Mayer, 2009); Damaged perceptions regarding ability can be repaired by demonstrating that the negative outcome was caused by either an external factor, and/or a more uncontrollable or unstable form of ability (Tomlinson and Mayer, 2009); Damaged perceptions regarding benevolence can be repaired by demonstrating that the negative outcome was caused by either an external factor, a more unstable form of ability, or an incident of low benevolence that is regarded to be unstable (Tomlinson and Mayer, 2009); Damaged perceptions regarding integrity can be repaired by demonstrating that the negative outcome was caused by either an external cause or a less stable internal cause (Tomlinson and Mayer, 2009); The stability dimension is particularly significant in terms of trust repair, and the willingness of either party within a relationship to accept vulnerability in future interactions (Tomlinson and Mayer, 2009); While trust can be repaired through consistent actions that demonstrate trustworthiness, in instances where deceptive behaviour is also evident, trust never fully recovers (Schweitzer et al., 2004). |
|---|---|

(Kim et al., 2004).
A promise has been shown to be significant in expediting the repair of lost trust, however if a promise is also accompanied by deception, the effectiveness of the promise as a facilitator for trust repair is diminished (Schweitzer et al., 2006);

Emotions are significant in developing and re-evaluating trust and trustworthiness (Dunn and Schweitzer, 2005, Jones and George, 1998, Lewicki and Bunker, 1996, Williams, 2001), and the ability to manage and reduce negative emotions of anger and fear will therefore influence trust repair (Tomlinson and Mayer, 2009).

| Social explanations for negative events | Initial assessments regarding a trustee’s trustworthiness are not always definitive, and can be nullified or re-assessed as additional information is received (Krull, 1996, Weiner, 1985);
Social explanations are likely to influence causal ascriptions to repair trust (Tomlinson and Mayer, 2009), as providing acceptable and genuine clarification for a negative event is more conducive to positive reactions than when outcomes are explained inadequately or not explained at all (Bies and Shapiro, 1987, Shapiro, 1991);
Causal ascriptions arbitrate the relationship between social explanations and trust repair (Tomlinson and Mayer, 2009);
A denial can repair trustworthiness through reducing internal ascriptions (Tomlinson and Mayer, 2009) and attributing negative outcomes to causes external to the trustee (Weiner, 1986);
An excuse that accepts some role in a negative outcome but not full responsibility (Scott and Lyman, 1968) can facilitate trust repair (Tomlinson and Mayer, 2009), by altering ascriptions such that the cause of a negative event is deemed to be more external, uncontrollable, and/or unstable |
| Apology or denial | (Weiner, 1992); An apology repairs damaged perceptions of trustworthiness by reducing stability factors ascribed to the trustee (Tomlinson and Mayer, 2009), and exhibiting a degree of remorse for the negative outcome (Tedeschi and Norman, 1985) along with evidence of a lesson learned that will ensure the offence is not repeated (Goffman, 1971); A justification presented when accepting responsibility can reverse previously held ascriptions in the negative, and repair damaged perceptions of trustworthiness (Tomlinson and Mayer, 2009). |
| As an apology admits guilt which may subsequently lower trust, the subsequent effects of an apology in the trust repair effort are not necessarily positive (Riordan et al., 1983, Schlenker, 1980, Sigal et al., 1988). However, the concurrent expression of regret indicates an intention to avoid future transgressions, which in turn should increase trust (Kim et al., 2004); An apology can be more effective than a denial in re-confirming cooperation after an opportunistic event (Bottom et al., 2002), however, an apology may fail to ameliorate the negative consequences of an accusation because of the fact that it includes an acknowledgement of guilt (Schlenker, 1980). Trust therefore may be damaged to a greater degree by an apology than any benefits that may be realized through a perception that the violation would be avoided in the future (Kim et al., 2004). A denial can be more effective than an apology due to the benefit of the doubt subsequently afforded to the trustee, however as a denial does not indicate any change in future behaviour, lingering doubts concerning the mistrusted party may prove detrimental to trust in the relationship. The cost to benefit conclusion may still be such that a denial does represent an effective riposte to |
When considering the apology versus denial responses, the nature of the trust violation in terms of competency or integrity is relevant; Matters of competency are influenced by situational factors and a person of high or low competence can each perform well or poorly depending on the situation (Kim et al., 2004); Matters of integrity are not influenced by situational factors, and an individual with high integrity will abstain from deceitful behaviour no matter what the situation, whereas an individual with low integrity may act either honestly or dishonestly depending on the situation (Kim et al., 2004). An apology should be more effective than a denial for violations pertaining to issues of competency (Kim et al., 2004). The apology confirms an intent to avoid future violations which is likely to have a positive effect on trust that would outweigh any negative effect forthcoming from the apology’s admission of guilt (Ferrin et al., 2005); A denial should be more effective than an apology for violations concerning issues of integrity (Kim et al., 2004), as an apology confirming one’s guilt would provide a reliable indication that one lacks integrity and this would outweigh any positive influence on trust repair that may be gained through the apology’s indication of redemption (Ferrin et al., 2005); These conclusions also hold true following confirmation of the mistrusted party’s innocence or guilt. The chosen response goes beyond an admission of innocence or guilt, but also indicates intended redemption, which is given greater credence in matters of competency when compared with matters of integrity. Hence, simply selecting the response measure according to the nature of the violation will likely jeopardise the trust repair effort, as trust will be further damaged if the

| Competency or integrity trust violations | When considering the apology versus denial responses, the nature of the trust violation in terms of competency or integrity is relevant; Matters of competency are influenced by situational factors and a person of high or low competence can each perform well or poorly depending on the situation (Kim et al., 2004); Matters of integrity are not influenced by situational factors, and an individual with high integrity will abstain from deceitful behaviour no matter what the situation, whereas an individual with low integrity may act either honestly or dishonestly depending on the situation (Kim et al., 2004). An apology should be more effective than a denial for violations pertaining to issues of competency (Kim et al., 2004). The apology confirms an intent to avoid future violations which is likely to have a positive effect on trust that would outweigh any negative effect forthcoming from the apology’s admission of guilt (Ferrin et al., 2005); A denial should be more effective than an apology for violations concerning issues of integrity (Kim et al., 2004), as an apology confirming one’s guilt would provide a reliable indication that one lacks integrity and this would outweigh any positive influence on trust repair that may be gained through the apology’s indication of redemption (Ferrin et al., 2005); These conclusions also hold true following confirmation of the mistrusted party’s innocence or guilt. The chosen response goes beyond an admission of innocence or guilt, but also indicates intended redemption, which is given greater credence in matters of competency when compared with matters of integrity. Hence, simply selecting the response measure according to the nature of the violation will likely jeopardise the trust repair effort, as trust will be further damaged if the |
A response is eventually found to be false (Kim et al., 2004).

| Apology and internal or external attributions | Situational factors influence behaviour, and subsequently provide a means for alleviating blame (Kim et al., 2006); Within the context of the apology response option, implications regarding internal and external attributions following competency- and integrity-based trust violations have been shown to be important (Kim et al., 2006); External attributions are of assistance for those who have transgressed in some way (Shaw et al., 2003); External attributions can also reduce a victim’s anger in response to a transgression, and subsequently moderate possibly provocative situations (Weiner et al., 1987); The viability of the external attribution response option does have limitations. Assuming responsibility with an internal attribution can facilitate more optimistic evaluations and expectations regarding future relationships (Hodgins and Liebeskind, 2003), as apposed to passing blame via an external attribution (Kim et al., 2006); External attributions can be less effective when reconciling a professional relationship following a transgression (Tomlinson et al., 2004); Matters of competence are more effectively dealt with by an externally attributed apology (Kim et al., 2006); Matters of integrity are more effectively dealt with by an internally attributed apology (Kim et al., 2006); In making an apology, a transgressor should either omit situational explanations or make external |
Factors known, depending on the nature of the transgression (Kim et al., 2006);
Even unmitigated apologies will provide differing results depending on the nature of the trust violation, i.e. competency-based or trust-based (Kim et al., 2004);
While integrity-based trust violations are more effectively repaired through external attributions, this does provide validation for giving a false account of one’s guilt, as such behaviour is detrimental to trust in a relationship. Instead integrity-based trust violations should be avoided in the first instance (Kim et al., 2006).

| Reticence | Reticence is a potential response to a trust violation;
Reticence is defined by Ferrin, et al. (2005, p. 1) as “a statement in which the accused party explains that he or she cannot or will not confirm or disconfirm the veracity of the allegation”;
Inherent in reticence is an implication or request that the violated party should withhold judgment regarding the claimed violation (Ferrin et al., 2005);
Reticence could be a reasonable response option following a negative event, depending on the situation e.g. strategic or legal rationale (Ferrin et al., 2005)
The use of reticence is typically, if not always suboptimal, even in instances where it is used for justifiable reasons (Ferrin et al., 2005). |
APPENDIX 2- SAMPLE EXTRACT FROM PMBOK CODING TABLE
(PRIMARY CODER)
<table>
<thead>
<tr>
<th>Themes (open codes)</th>
<th>Dimensions (axial codes)</th>
<th>Coded occurrences in PMBOK (text and reference number)</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competence</td>
<td>Competence is a significant determinant of trust (Costigan et al., 1998, Karlsen et al., 2008, Lander et al., 2004); The ability of the respective team members is an essential element of trustworthiness (Butler, 1991, Deutsch, 1958, Gabarro, 1978, Sitkin and Roth, 1993); Competence trust – One party’s belief that another party is competent to undertake the allocated work (Hartman, 1999); Evidence of competence – Past experience, certification, reputation, job title, affiliation with a professional association.</td>
<td>9.1.3.1 “Training needs – If the team members to be assigned are not expected to have the required competencies, a training plan can be developed as part of the project. The plan can also include ways to help team members obtain certifications that would support their ability to benefit the project” (PMI, 2008, p. 225).</td>
<td></td>
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<td></td>
<td></td>
<td>9.2.1.2 The enterprise factors that can influence the Acquire Project Team process include, but are not limited to: Existing information for human resources including who is available, their competence levels, their prior experience, their interest in working on the project and their cost rate” (PMI, 2008, p. 227).</td>
<td></td>
</tr>
<tr>
<td>Benevolence</td>
<td>Benevolence is described as one party’s belief that another party will act compassionately, and is considered a common characteristic of trust (Lamsa and Pucetaite, 2006);</td>
<td>PMBOK recognises that the competence of the respective team members will influence the outcomes of the project. In this regard, certifications which support the ability of team members to benefit the project are accepted as evidence of competence. Competence is identified as a factor to be considered when acquiring the human resources for the project team, with prior experience accepted as evidence of competence.</td>
<td></td>
</tr>
<tr>
<td>Themes (open codes)</td>
<td>Dimensions (axial codes)</td>
<td>Coded occurrences in PMBOK (text and reference number)</td>
<td>Explanation</td>
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<tr>
<td>Benevolence suggests an emotional attachment between a trustor and a trustee (Mayer et al., 1995), and is essentially concerned with relationships amongst members of the project team;</td>
<td>9.3.2.1</td>
<td>“The project management team can greatly reduce problems and increase cooperation by understanding the sentiments of project team members, anticipating their actions, acknowledging their concerns, and following up on their issues. Skills such as empathy, influence, creativity, and group facilitation are valuable assets when managing the project team” (PMI, 2008, p. 232).</td>
<td>This axial code identifies the issue of benevolence when considering relationships amongst members of the project team. In this regard, connotations of benevolent behaviour are recognised by PMBOK, and are considered important to reducing problems and increasing cooperation within the project team.</td>
</tr>
<tr>
<td>Benevolence may be revealed through emotive actions of friendliness, cooperativeness, cheerfulness and openness (Karlsen et al., 2008), with these actions increasing the propensity to trust;</td>
<td>9.3</td>
<td>“Objectives of developing a project team include, but are not limited to: <strong>Create a dynamic and cohesive team culture to improve</strong> both individual and team productivity, <strong>team spirit, and cooperation</strong>, and to <strong>allow</strong> cross-training and mentoring between <strong>team members to share knowledge and expertise</strong>” (PMI, 2008, p. 230).</td>
<td>This axial code identifies cooperativeness and openness as indicators of benevolence. In this regard, the objectives of developing a project team as identified by PMBOK include creating a team culture which improves team spirit and cooperation, and facilitates sharing of knowledge and expertise between members of the project team. The concepts of benevolence as identified by this axial code are therefore indirectly considered in this instance by PMBOK however the direct link between benevolence and the propensity to trust is not implicitly established.</td>
</tr>
</tbody>
</table>
APPENDIX 3 - SAMPLE EXTRACT FROM PMBOK CODING TABLE
(SECONDARY CODER)
<table>
<thead>
<tr>
<th>PMBOK sample text:</th>
<th>Axial trigger codes identified by Primary Coder</th>
<th>Explanation by Secondary Coder</th>
</tr>
</thead>
</table>
| 1.4.4 “A project management office (PMO) is an organisational body or entity assigned various responsibilities related to the centralised and coordinated management of those projects under its domain. … A primary function of a PMO is to support managers in a variety of ways which may include, but are not limited to … Coaching, mentoring, training and oversight” (PMI, 2008, p. 11). | A trusting predisposition is likely to be developed, if one party is seen to offer assistance to another party, despite a lack of opportunity for extrinsic reward (Mayer et al., 1995). | Two-way trust developed between PM and those within his/her influence by way of training/mentoring/staff development, be it internal to the firm or with trading partners.  
(Possible link to value generation for the firm? Value versus cost? Short term cost for long term gain?) |
<p>| 5.1.2.3 “Workshops are considered a primary technique for quickly defining cross-functional requirements and reconciling stakeholder differences. Because of their interactive group nature, well-facilitated sessions can build trust, foster relationships, and improve communication among the participants which can lead to increased stakeholder consensus” (PMI, 2008, p. 107). | Trust will facilitate cooperative relationships, which allow the exchange of information through the effective interaction of the project team (Misztal, 1996); Good communication is critical to project success, and will ultimately assist and encourage the development of trust (Pinto et al., 2008, Wong et al., 2008); Open communication is likely to help empower and motivate individual stakeholders to gel together in such a way that the interests of the project are placed before the interests of the individual. If the project manager is able to build trust amongst key stakeholders, the subsequent loyalty created can foster an environment in which stakeholders understand and trust the direction of the project and the organisation as a whole (Beslin and Reddin, 2004). | Workshops in PMBOK = initial project team meetings in construction projects. Facilitate teambuilding, which in turn should foster trust. Collaboration rather than conflict. It is implicit in this statement that poorly facilitated workshops may hinder teambuilding and trust formation. Naturally, teams work better than individuals in a project setting. |</p>
<table>
<thead>
<tr>
<th>PMBOK sample text:</th>
<th>Axial trigger codes identified by Primary Coder</th>
<th>Explanation by Secondary Coder</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>9.3</strong> <strong>Teamwork is a critical factor for project success, and developing</strong></td>
<td>The effectiveness of any project is strongly correlated to the quality of communication within the project environment (Packendorff, 1995);</td>
<td>Collaboration rather than conflict. Transparent communication within a project team fostering trust, leading to increased project team performance. Project-wide problems solved best by collaborative problem solving, aided and abetted by trust-inducing open communication.</td>
</tr>
<tr>
<td><strong>developing effective project teams is one of the primary responsibilities</strong></td>
<td>Good communication is critical to project success, and will ultimately assist and encourage the development of trust (Pinto et al., 2008, Wong et al., 2008);</td>
<td></td>
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<tr>
<td><strong>of the project manager … High team performance can be achieved by using open</strong></td>
<td>The need for open and accurate communications is logically significant, as project stakeholders are required to work in a coordinated fashion in order to get things done;</td>
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<tr>
<td><strong>and effective communication, developing trust among team members, managing</strong></td>
<td>Good communication will help overcome problems resulting from a lack of familiarity amongst project stakeholders;</td>
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<tr>
<td><strong>conflicts in a constructive manner, and encouraging collaborative</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>problem-solving and decision-making” (PMI, 2008, p. 229).</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>9.3.2.3</strong> <strong>To build effective project teams, project managers should</strong></td>
<td>- The need for open and accurate communications is logically significant, as project stakeholders are required to work in a coordinated fashion in order to get things done;</td>
<td>Project managers should be seen to be champions of collaborative team working. If they are championing something then they are doing this for someone, namely senior management. In this way, the visible support of the highest echelons reassures the project team that their efforts will have the support of the organisation(s) to which they belong, and will contribute to their strategic business goals.</td>
</tr>
<tr>
<td><strong>obtain top management support, obtain commitment of team members, introduce</strong></td>
<td>- Trust is important across hierarchical levels and between respective organisational departments (Pinto and Slevin, 1987);</td>
<td></td>
</tr>
<tr>
<td><strong>appropriate rewards and recognition, create a team identity, manage conflicts</strong></td>
<td>- Trust is vital to facilitating cooperative processes in the project environment (Kramer, 1999, Wicks et al., 1999);</td>
<td></td>
</tr>
<tr>
<td><strong>effectively, promote trust and open communication among team members, and,</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>above all, provide good team leadership” (PMI, 2008, p. 232).</strong></td>
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</tr>
</tbody>
</table>
APPENDIX 4- ETHICS APPROVAL
Notification of Expedited Approval

To Chief Investigator or Project Supervisor:  Doctor Thayaparan Gajendran
Cc Co-investigators / Research Students:  Associate Professor Graham Brewer

Mr Scott Strahorn

Re Protocol:  Relationships in construction procurement methods: a small scale, exploratory study

Date:  25-Sep-2012
Reference No:  H-2011-0224

Thank you for your Variation submission to the Human Research Ethics Committee (HREC) seeking approval in relation to a variation to the above protocol.

Variation to add Scott Strahorn to the research team

Your submission was considered under Expedited review by the Ethics Administrator.

I am pleased to advise that the decision on your submission is Approved effective 25-Sep-2012.

The full Committee will be asked to ratify this decision at its next scheduled meeting. A formal Certificate of Approval will be available upon request.

Professor Allyson Holbrook
Chair, Human Research Ethics Committee

For communications and enquiries:
Human Research Ethics Administration

Research Services
Research Integrity Unit
HA148, Hunter Building
The University of Newcastle
Callaghan NSW 2308
T +61 2 492 18999
F +61 2 492 17164
Human-Ethics@newcastle.edu.au

Linked University of Newcastle administered funding:

<table>
<thead>
<tr>
<th>Funding body</th>
<th>Funding project title</th>
<th>First named investigator</th>
<th>Grant Ref</th>
</tr>
</thead>
</table>

Scott Strahorn- 304294
APPENDIX 5 - SEMI STRUCTURED INTERVIEW SCRIPT
**SEMI-STRUCTURED INTERVIEW SCRIPT**

Document Version II, dated [16/06/11]

This research is being conducted by the researchers at the University of Newcastle. It aims to identify and explore the emergent relationships in the context of different construction procurement methods. The data collected from you will only be used for academic purposes. You will not be directly or indirectly identifiable in the final thesis or in any of the publications arising from this study. There is no right or wrong answer and we are only interested only in your views.

Thank you.

**INTERVIEW QUESTIONS**

A. I'd like to understand the scope of your normal duties, during normal day-to-day work.

1. What are the types of projects you have been directly involved with during your current tenure?
2. What would be the average contract sum price for the projects you complete?
3. What is your position within the management of a project?
4. What is the nature of the decisions that you routinely have to make, in terms of their scope, their influence on design and construction procurement?
5. What are the internal influences on these decisions i.e. influences from within your organisation?
6. What are the external influences on these decisions i.e. from stakeholders within projects on which you're working?
7. What is the degree of formality you employ when communicating them i.e. written justification for decisions taken?
8. Would you say you deliberately communicate in a different way for different stakeholders?
B. Now I would like to understand, what in your view, constitutes relationships between project stakeholders?

1. In your opinion who are the common stakeholders associated in the projects you have been involved with?
2. How would you describe the different types of relationships that you see between the different stakeholders?
3. How have these relationships affected the outcome of the project? (benefited or disadvantaged)
4. In your opinion what is the most ideal and effective relationship to have between stakeholders to ensure a successful outcome of the project?
5. What is your understanding of the benefits/costs associated with developing the types of relationships you have described?
6. What do you see as the factors that influence emergence of different types of relationships?

C. Now I would like to understand how alternative procurement methods influence the way relationships emerge in projects.

1. What are the common procurement methods you have been involved with?
2. What are the business considerations that lead you to decide whether to use a procurement method e.g. financial, technical knowledge, availability of skilled labour, risk?
3. To what extent do you consider relationship dimension influencing the use of a particular procurement method?
4. To what extent do you consider the traditional and relational procurement mechanisms differ in developing required relationships?
5. What procurement methods have you found to have the most negative and positive impact on stakeholder relations and what was the overall effect this had on the outcome of the project.
APPENDIX 6- SAMPLE EXTRACT OF INTERVIEW TRANSCRIPT
CODING OUTCOMES
| Interview No. 1 | - The PM recognises the importance of communication in terms of good stakeholder relationships.  
- The PM again highlights the link between relationships and communication.  
- In particular, face-to-face communication is considered by the PM to be critical, in terms of developing and maintaining stakeholder relationships.  
- “Number one preference is to go and see the client face-to-face”.  
- “you develop a rapport with someone when sitting across the desk from someone....sitting next to them and working through something with them”.  
- The PM also makes the link between communication and competence. i.e. Through face to face communication, “they can see you are actually someone who knows what they are talking about”.  
- The subsequent development of trust founded on communication and competence was not explicitly recognised by the PM.  
- The PM again emphasises the importance of face-to-face communication in establishing and maintaining relationships.  
- Formal communication via email, letter or minutes is also vital for documenting face-to-face discussions.  
- The PM recognises the influence of communication in establishing and maintaining relationships amongst stakeholders.  
- The PM again emphasises the importance of both informal and formal communication in terms of stakeholder relationships.  
- By following informal communication up with formal communication, one's level of professionalism is displayed (Competence). |
| Interview No. 5 | - In order to develop trust amongst stakeholders, the PM believes it is “best to be upfront, open, and honest”.

Procurement type: Traditional  
Main theme code: Communication
- The PM therefore acknowledges the importance of communication in trust (upfront, open).
- The PM also makes the connection between honesty and trust.

<table>
<thead>
<tr>
<th>Interview No. 7</th>
</tr>
</thead>
</table>
| - When responding to negative events (trust breakdown and trust repair), the Client Rep believes it is important “to try to avoid escalation, try to keep resolutions of issues as informal as possible, without the need to resort to formalising things”.
| - “So talk before you write letters”.
| - The importance of communication is also highlighted, with informal communication considered to be more effective, although formal communication is still required to clarify discussions.
| - The Client Rep reinforces the importance of open and clear communication in terms of essential traits for a good relationship.
| - Characteristics which the Client Rep considers to be good in a manager (even in spite of a hard style of management) include:
| - “they're good communicators with their people” (communication)
| - “they have their respect” (competence)
| - “they have some empathy with their people” (benevolence)
| - The Client believes that senior management who “criticise their team in front of others” will be having a detrimental affect on the culture of the respective company.
| - The importance of communication is again highlighted in this regard.
| - In discussing the importance of the people themselves, the Client Rep highlights how “good leadership and mentorship” will “develop a culture of willingness to discuss things and work things through as well”.
| - The importance of communication is therefore acknowledged (“willingness to discuss things”).
| - The Client Rep acknowledges the importance of communication in terms of |
relationship interactions.

- “We have monthly review meetings with the Contractor”.

- The Client Rep believes that the informal presentation of the “next contractor performance report” is a “very powerful tool in the management of contractors”.

- The importance of communication in terms of relationship interactions is subsequently acknowledged.

- Similarly, the Client Rep also acknowledges the importance of communication when addressing problems. “It's a really good and positive tool and it's often a really constructive way of addressing problems as well”.

- Given that negative events can facilitate a breakdown in trust between stakeholders, communication in this regard is logically important when dealing with situations where trust levels have diminished.

- In discussing communication, the Client rep believes that “written comment as well as just a numerical score is of real value as well”.

- This provides an insight into the content of communication within the project environment.

- The Client Rep highlights his view that face-to-face communication is desirable over non face-to-face communication due to the human element that is paramount in any relationship.

- In this regard, face-to-face communication allows aspects of body language and tone to be readily interpreted.

- Where as non face-to-face communication can lead to misinterpretation of meaning and tone. e.g. you can't gauge body language or tone in an email. “depending on how you interpret that email, that can affect the relationship in a good or a bad way”.

Interview No. 8

- The Contractor's Project Engineer (PE) acknowledges that ongoing interactions and communication between stakeholders is integral in developing and improving a relationship.

- In discussing the fundamental ingredients for a good relationship, the
Contractor highlights the importance of communication, particularly open and transparent communication.

- “In my experience, those ingredients are communication, the transparency between each other on all issues”.

- Adding to his view on what makes a good relationship, the Contractor's Project Engineer (PE) reinforces the importance of open communication.

- Particularly when problems arise on a project, open communication and working together to find a resolution is also considered by the Contractor's Project Engineer (PE) to be important in terms of maintaining good relationships.

- Such negative events have the potential to lead to a breakdown in trust, and therefore the importance of “open communication” and “working together to solve problems” is significant in this regard.

- In discussing communication, the Contractor's Project Engineer (PE) provides examples of both formal and informal communication.

- Communication is “generally by weekly coordination meetings, but also it is every day, face to face on site”.

- In discussing communication in his current project under the ECPM procurement method, the Contractor's Project Engineer (PE) believes that face-to-face communication is preferred over email.

- He also confirms that he has not found this to be the case in traditional D&C or construct only contracts.

- This scenario highlights how the chosen procurement method (control mechanism) can directly influence communication between stakeholders, and subsequently also influence relationships.

- In discussing his current ECPM project, the Contractor's Project Engineer (PE) believes the fact that they are located next door to the client has a positive influence on the relationship.

- “The client is next door. We are walking into their office every day and they
are in our office everyday”.

- This reinforces the importance of regular communication, but also how ongoing interactions between stakeholders facilitates the development and maintenance of strong relationships.

- In contrast, on a traditional or D&C contract arrangement, the client is not generally readily accessible to the site or other stakeholders, nor are they actively involved in the day to day goings on of the project.

- “They might have one representative there looking at what we're doing and reporting back”.

- Hence the importance of regular communication and relationship interactions in developing and maintaining stakeholder relationships is again reinforced.

- The Contractor discusses how communication is used to resolve conflict.

- “A constructive debate to work out the best way to do it. If they put their foot down we just follow suit”.

- The Contractor's Project Engineer (PE) confirms the potential for conflict (trust breakdown) within the project environment, even internally with the same organisation.

- “There was a lot of conflict between the parties and the heads of each party just did not want to get on with each other”.

- The Contractor's Project Engineer (PE) believes that a lack of communication played a big part in the poor relationships. Subsequently the importance of communication in a relationship is acknowledged.

- “With no communication, productivity and program are disadvantaged”.

- Alternatively, “where the divisions are communicating very well it is a very efficient job. Productivity is good, morale is good, people are happy”.

- The Contractor's Project Engineer (PE) again reinforces the importance of good communication and good relationships, directly linking these factors with productivity (project success).

- “Productivity comes from good communication and good relationships”.
- While not explicitly acknowledged, given the themes of relationship and communication inherent in trust, the link between trust and project success is implicitly made.

- The Contractor's Project Engineer (PE) agrees that productivity and relationships can still be fostered within hard dollar traditional procurement.

- The Contractor's Project Engineer (PE) again reinforces the importance of relationships and communication.

- “It is all about the relationship between people on the job”.

- The direct link between relationships and communication and a positive team environment is also acknowledged. “If it is bad relationships the communication is broken and the team is broken”. “It becomes a bunch of individuals working individually to achieve something”.

- The importance of communication is again acknowledged by the Contractor's Project Engineer (PE)

- “If there is no communication, a job will stop”.

- The Contractor's Project Engineer (PE) highlights themes of communication and leadership, and ultimately the management of people as being critical in terms of positive project outcomes.

- The importance of relationships to project success is acknowledged.

- The importance of communication is acknowledged.

- The importance of a positive team environment, and in particular leadership, is acknowledged.

- The link between trust and project success is implied.

- The subsequent benefits of these trust dimensions in reducing conflict (trust breakdown) is also therefore acknowledged.

<table>
<thead>
<tr>
<th>Interview No. 12</th>
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<tbody>
<tr>
<td>- The CPM believes the people themselves are paramount on any project, particularly when problems arise.</td>
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<tr>
<td>- In this regard, the partnering approach builds relationships, and allows</td>
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</tbody>
</table>
resolutions to be reached without conflict (avoiding potential trust break down).

- “It all comes down to the people that you have got on the job”.

- “I have never had a project that has gone to any adversarial lengths at all. We always went through the issues and partnered our way through all the problems and never had an issue”.

- The importance of communication (“we always went through the issues and partnered our way through all the problems”) is subsequently acknowledged.

- Similarly, the importance of a positive team environment is also acknowledged, albeit implicitly.

- While trust itself is not explicitly acknowledged, underlying themes pertinent to trust are implicitly apparent.

- The CPM believes that personality traits whereby people are cooperative and happy to discuss things rationally are necessary for a relationship to succeed.

- The link between relationships and communication is therefore made.

- “Trust is vital in facilitating cooperative processes in the project environment” (REF). As the CPM has identified the importance of cooperation in a relationship, the link to trust is also implicitly made.

- The CPM directly identifies characteristics of trust, cooperation and communication as been important to relationships and project success.

- The CPM recognises the importance of both informal and formal communication.

- Informal communication is generally used in the first instance, followed up by formal communication to clarify and confirm as required.

- The CPM has always chosen to manage his projects with the informal communication approach in the first instance. Implied is the idea that informal communication is more conducive to building relationships, with formal communication the fall back for when things go wrong.

- The CPM recognises the cultural change that has occurred whereby contracts are setup to ensure a physically close working environment between
stakeholders. “It is stipulated that they create our management office in their compound”.

- The CPM believes this geographical proximity is significant in terms of the building of relationships. “We have an almost interconnecting corridor”.

“Living together, working together”. “You are right there. You can see them and you go and sit down and talk to them”.

- The link between communication and relationships is again reinforced, as is the implied link between trust and project success.

- The CPM again reinforces his preference for informal communication, and how the formal communication in the first instance approach is counterproductive to building good relationships.

- “I find sending emails pretty impersonal”.

- Within traditional contracting (as with Alliancing), the CPM again highlights the importance of both informal and formal communication.

- In considering bad stakeholder relationships, the CPM believes that open communication is significant.

- “If there are issues there, you've just got to bring them out in the open and discuss them”

- A failure to openly communicate and resolve issues can lead to little issues becoming big issues.

- “They tend to grow, little issues, if you didn't resolve little issues as you go”.

- In making the connection between a lack of open communication and the negative effect on relationships and the project as a whole, the CPM also implicitly recognises how a lack of communication can lead to a break down in trust.

| Interview No. 13 | - The client PM reinforces the importance of trust in terms of characterising a good relationship. “Just trust. There are lots of words you can say, but just trust”.

- The importance of communication is also recognised. Particularly when claims |
are to be submitted, an open approach from the contractor in terms of communication in this regard is considered to be important by the Client PM. This is in contrast to no communication, and the submission of claims without warning, and under the security of payments act. “Open communication is good”.

- “We just want to be able to trust our contractors. It is all about trust”.

| Interview No. 16 | - The contractor provides an example of a relationship that had soured because of a consultant not communicating effectively or efficiently, and ultimately not fulfilling their obligations adequately (lack of competence)
- Through interaction and communication in this regard the situation has improved.
- The Contractor highlights the link between relationships and communication.
- The link between trust and project outcomes is subsequently implied.
- “Everyone is cooperating, everyone is getting on well, getting answers back on questions very promptly”.
- The good relationships, founded on good communication, are helping to develop trusting relationships and ultimately contributing to positive project outcomes. |

| Interview No. 17 | - The client recognises the need to build relationships (and trust) with all stakeholders, at all levels of the supply chain.
- He highlights the need for interpersonal communication and interactions.
- Themes of benevolence are also apparent in his dealing with other parties.
- “Now I walk out there and I go right up to the guy shovelling concrete and ask him how he is going”.
- The Client highlights the need to develop relationships and trust between stakeholders, and recognises the subsequent benefits to the project.
- Interpersonal communication and interactions are important in this regard.
- The subsequent level of benevolence between the two parties is also apparent. |
| Interview No. 18 | - “I ring them up and have a chat. We talk. And there is a very instant relationship”.

- “There was an instant rapport and I had an instant feeling of comfort. I could work with you. I could ask him what his feelings were”.

| Interview No. 19 | - The PM believes that the input from the client in terms of clearly defined project objectives (good control mechanisms and also good communication) has played a considerable role in the success of the project.

- A level of trust towards the client and the project objectives would logically be forthcoming as a result of a clear direction for the project being understood by all stakeholders.

- The link between trust and project success can therefore be made.

- The importance of communication and also appropriate risk allocation and management in any control mechanism is also highlighted.

- “If you have got clear guidelines it is quite easy to give clear outputs”.

| Interview No. 19 | - The Architect believes his current project is progressing well due to the good relationships, team effort, positive attitude and behaviours, and good lines of communication.

- All of these factors are considered to be positive.

- The link between trust and project success is therefore somewhat implied.

- The influence of the individuals involved is also acknowledged.

- The Architect highlights the influence of good communication, particularly when responding to issues that arise.

- “If they have got a problem, he will just help them sort it out”.

- The Architect acknowledges the benefits of communication, particularly when responding to issues and resolving things before they become adversarial.

- “Communication is the key”.

- The importance of communication is again highlighted, particularly when responding to problems when they arise.
- Themes of benevolence are also apparent in what the Architect sees as good communication.

- “If there is a problem we will say, look we have missed this, can you help us out?”

- The Architect discusses how he actively tries to foster an attitude of teamwork and communication within his project team.

- “I initially try to foster communication and working as a team”.

- The benefits of communication, relationships and trust are therefore acknowledged.

- Despite this approach, the Architect has still experienced some cases (albeit increasingly rare) whereby this approach does not work, “with the individuals within organisations”, resulting in a “big confrontation with the builder”.

- This reinforces the importance of people themselves in any contract arrangement, and also demonstrates the potential for conflict and trust breakdown.

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- This reinforces the importance of people themselves in any contract arrangement, and also demonstrates the potential for conflict and trust breakdown.

- The Architect discusses issues on his current project, which have arisen as a result of a lack of coordination with the shop drawings by the head contractor.
- These issues, founded on factors of competence, would logically influence relationships and trust between stakeholders.

- A lack of communication between stakeholders has also contributed to resolving the issues.

- “We get clashes and then you have got to sort out the problems on site. Whereas if they address the problem at the shop drawing stage, that would not be an issue”.

- This highlights the importance of competence and communication in terms of stakeholder relationships and trust, and also demonstrates how trust can potentially break down.

- In discussing effective ICT improvement and collaboration, the Architect believes that it is beneficial for “all team members to get together at the beginning of a project and agree on how it could best be utilised in terms of the total project”.

- The importance of building relationships and trust is therefore acknowledged, as is the need for effective communication and common goals.

<table>
<thead>
<tr>
<th>Interview No. 20</th>
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<tbody>
<tr>
<td>- The Engineer recognises the positive influence of strong relationships (and trust) on project outcomes.</td>
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<tr>
<td>- He actively pursues the development of strong relationships with other stakeholders.</td>
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<tr>
<td>- “I personally tried to involve myself on more than just a business level, because you do work with them continuously for 12 or 18 months”.</td>
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<tr>
<td>- Multiple interactions over time, as well as communication (informal over a beer) fosters the development of strong relationships and trust.</td>
</tr>
<tr>
<td>- “When it is time to have a beer and a chat, everyone makes themselves available”.</td>
</tr>
<tr>
<td>- The Engineer therefore acknowledges the benefits of a positive team environment.</td>
</tr>
<tr>
<td>- Respect (competence) between stakeholders also plays a role in developing</td>
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</tbody>
</table>
relationships and maintaining a positive team environment.

- “Generally we all get on pretty well. We respect each other’s discipline and professionalism”.

- The Engineer also highlights how individual personalities influence a project.

- “If you have problems with them personality-wise, then it is going to be there always for the rest of the project”.

- The Engineer acknowledges the importance of communication (and subsequently trust) in terms of project success and stakeholders working together towards common project objectives.

- “There is no doubt that communication is the key”.

<table>
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<tr>
<th>Interview No. 21</th>
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</table>
| - In discussing his current project, the QS believes that the environment is generally positive, but that “there are always issues on projects”.

- On any project, issues eventuate which can impact on stakeholder relationships, e.g. scope changes by the client. These issues would have the potential to result in a break down in trust.

- “in terms of exchanges it gets a bit frustrating for everybody but that is the way it is”.

- The QS goes on to say that while these issues are inevitable, good communication helps to overcome them.

- “it gets a bit frustrating that things may go around in a circle for a while and you're trying to resolve those issues”.

Interviewer. But in terms of communication, it is flowing is it?

Interviewee. “Yes, yes”.

- The QS identifies the need for all stakeholders to consider the overall project goals.

- “You have got to look at the overall project goals”.

- However, he does not believe that there is any formal recognition or direction within the management of the project as to how this is going to be achieved.
"No one has sat down and said this is what we are going to do”. Hence, working towards common objectives is reliant totally on the individuals involved, and their respective understanding of where the project is heading.

"Some of the goals are obvious. You know it comes back to budget. Budget is obvious. The client has made it pretty clear that budget is extremely important. As is programme. And again back to quality, it has got to function properly”. "They are the goals but no one has said this is the statement for the project, this is what we want to achieve”.

As strong relationships, trust and communication can all help foster an environment whereby common goals are the priority over individual goals, a more proactive approach in this regard could be beneficial.

Alternatively, maybe the level of relationship and trust between stakeholders are sufficiently strong that there is some level of common understanding regarding these goals without them been written down or prescriptively pursued.

- The subcontractor recognises the importance of good communication, particularly when resolving issues when they arise.

- “my door is always open so it is always coming in and speaking about any issues”.

- This approach would be conducive to developing and maintaining strong relationships and trust.

- This open communication would also assist in situations whereby there is the potential for a break down in trust.

- The subcontractor acknowledges the importance of communication, particularly face-to-face communication, as well as the interpersonal relationships.

- “Communication is obviously critical”.

- “more importantly to run a project it is the face-to-face meetings out on site”.
- The subcontractor discusses how relationships and communication between stakeholders can be contractual in some instances, and more personal in others.

- “I suppose sometimes it becomes more contractual. Whereas if you have got the personalities (relationships) there, you say good day, it is a lot more personal”.

- “It is easier to work both together than if you do not know the person”.

- Hence, the subcontractor acknowledges the benefits of strong personal relationships and trust in any project/contract (control mechanism).

- The benefits of strong relationships and trust, as opposed to strict contractual controls is also highlighted.

- The importance of the individual personalities involved is also highlighted.

- In discussing communication, the subcontractor recognises the benefits of personal communication, particularly when responding to negative events and sorting out issues when they arise.

- “It is more important to be out there on site, physically talking to the people. Sorting out problems in person”.

- As negative events could potentially lead to a breakdown in trust and the need for trust repair, the benefits of communication in terms of trust repair is subsequently also acknowledged.

<table>
<thead>
<tr>
<th>Interview No. 23</th>
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<tbody>
<tr>
<td>- In discussing communication, the Contractor believes that the best form of communication is at a personal level.</td>
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<tr>
<td>- This is particularly pertinent when resolving issues.</td>
</tr>
<tr>
<td>- “I find the best way to resolve problems is to pick the phone up and talk to them”.</td>
</tr>
<tr>
<td>- This reinforces the human element in any project or contract (control mechanism).</td>
</tr>
<tr>
<td>- This approach would also help to develop and maintain strong relationships and trust between stakeholders, which would be of benefit to the overall project.</td>
</tr>
</tbody>
</table>
- The Contractor again recognises the importance of communication in any project.

- Regarding his current project, a better communication strategy from the beginning of the project would have been beneficial, and could have helped resolve some of the issues that did eventuate.

- The Contractor recognises the benefits of strong relationships and trust in terms of project outcomes.

- With regards to contracts (control mechanisms) he believes that better outcomes are achieved with strong relationships and trust, rather than enforcing contract conditions. This also reinforces how trust can reduce the need for control, and also the importance of the Human element.

- “I find that you get far better outcomes if we are not just quoting contract clauses at each other all the time”.

- “There are a myriad of other issues which I find can be dealt with and resolved on a one on one or one on three basis it usually is with Hunter Area Health”.

- This approach would also be conducive to building trust and strong relationships, and hence the Contractor recognises the benefits in this regard.

- The importance of communication is also highlighted, with regards to developing and maintaining relationships and trust, as well as working through issues and disputes when they arise.

- “getting their project team together and sitting round the table and thrashing the issue out”.

<table>
<thead>
<tr>
<th>Interview No. 25</th>
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<tbody>
<tr>
<td>- The Engineer discusses the relationships on the project, and acknowledges that they need to work closely together.</td>
</tr>
<tr>
<td>- A collaborative and cooperative approach (founded on good relationships and trust) is implied.</td>
</tr>
<tr>
<td>- “We tend to work very closely with other design members of the team”.</td>
</tr>
<tr>
<td>- The importance of communication is also acknowledged, with the subsequent development of relationships and trust also implied.</td>
</tr>
</tbody>
</table>
- “We need to communicate very freely and openly”.
- The Engineer confirms the risks and challenges that are inevitable on any project.
- Project success in terms of design is dependent on good communication and collaboration between the design team.
- The need for good relationships (and a level of trust) is therefore acknowledged, with this trust helping to overcome the risks on the project.
- The Engineer believes that a collaborative approach is required when working with other stakeholders.
- “We have a culture of dealing very much in a collaborative way”.
- “It is pretty much a collaborative approach”.
- “At the end of the day, people working in isolation will not produce the best result”.
- This highlights the importance of relationships and trust in terms of stakeholder interactions and project outcomes.
- As the Engineer comes to the project with this mindset, this scenario highlights how the initial intent of stakeholders is influential.
- As the individuals involved are required to work collaboratively together, this re-emphasises the significance of the individuals themselves in any contract (control mech).
- In order to effectively collaborate, communication and its subsequent themes regarding trust are significant. The decision by the Engineer and other stakeholders to work collaboratively further highlights this.
- The Engineer believes that in order to produce the best results, “all design team members” need to have “an appreciation of what the other design team members are trying to do”.
- Themes of benevolence are therefore acknowledged by the Engineer.
- The link between these benevolent themes and relationships and
communication is also highlighted.

- “I think by having that collaborative approach, you can get a totally integrated building”.

- The Engineer again highlights the importance of good relationships (trust implied) and communication in terms of project outcomes.

- “Projects where the design members can sit down and talk with contractors and build up a good relationship with them. These jobs tend to be more successful”.

- “If the Contractor approaches the project in a proactive way and there is close communication a lot of problems can be resolved before they actually become a problem. These are the kind of projects (you want) to work on”.

- The Engineer believes that projects where communication is difficult become quite frustrating for all involved.

- Hence the Engineer recognises the need for good communication and also the negative outcomes that are the result of poor communication.

- Communication is particularly important when resolving issues that arise.

- This scenario also highlights the significance of the initial intent of project stakeholders.

- The Engineer again highlights the importance of good communication, particularly in avoiding potential issues that might otherwise eventuate.

- “To be able to have the opportunity to pick up the phone and talk … can avoid problems coming up.

- The Engineer reinforces the importance of relationships (trust implied) and communication, particularly when issues arise.

- If all stakeholders take a best for project approach and openly discuss issues, then better outcomes can be achieved.

- This approach is also likely to be conducive to the development and maintenance of trust in stakeholder relationships.

- “If the Contractor says this is a problem”, and “this is a solution we have
thought about”, then it is a “proactive way of trying to provide the best building we can, as apposed to just playing the contractual game”.

- This scenario also highlights the importance of the people themselves in any contract (control mechanism), and the role good relationships and trust play in any contract.

<table>
<thead>
<tr>
<th>Interview No. 26</th>
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<tbody>
<tr>
<td>- The QS discusses how a lack of direct communication and interaction with a client can be an issue.</td>
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<tr>
<td>- “All you seem to deal with is the project manager. I do not like that. You are separated from the man who is paying you. It is very hard to build up a level of trust, to know that that person is telling the client without doubt what you are telling him”.</td>
</tr>
<tr>
<td>- The QS therefore recognises the need to have a strong relationship with his client, and the subsequent benefits in this regard.</td>
</tr>
<tr>
<td>- The requirement for interaction and communication to build this relationship is also acknowledged.</td>
</tr>
<tr>
<td>- This scenario also highlights how the lack of trust between him and the Project Manager is detrimental, and that it requires time and effort to “build up a level of trust”.</td>
</tr>
<tr>
<td>- The need to develop trust from a low base to a high base in any project is also highlighted.</td>
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<tr>
<th>Interview No. 27</th>
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<tbody>
<tr>
<td>- The Subcontractor discusses stakeholder relationships and believes that mostly they are good, however “there are a few dummy spits”. These would be avoided through better communication.</td>
</tr>
<tr>
<td>- “Most of it would be alleviated if they communicated better”.</td>
</tr>
<tr>
<td>- “If we had a bit more freedom of information ..... a lot of the problems we have to face day after day would be alleviated”.</td>
</tr>
<tr>
<td>- Hence the subcontractor identifies the link between relationships (trust implied) and communication. i.e. relationships are developed and maintained through interaction founded on good communication.</td>
</tr>
</tbody>
</table>
- The subcontractor demonstrates a benevolent attitude towards other trades and actively looks out for the interests of other stakeholders.

- “You do see how it will effect the electrician or how it will affect the plumber. The courteous phone call to them to say we are going to do this is going to affect something is not required by me. But I will do it and they are very helpful reciprocating”.

- He also recognises this approach is conducive to developing and maintaining relationships (and trust) and that this will be reciprocated, ultimately benefiting the overall project outcomes.

- “It does build a good relationship”.

- This scenario demonstrates how past experiences drive future attitudes and behaviours.

- The initial intent of stakeholders is also identified as being important, with the temporary nature of a project adding to the need for stakeholders to adopt this benevolent and cooperative attitude from the beginning.

- An understanding that the project environment is not naturally conducive to multiple interactions and that the development of trust is therefore hindered would be beneficial, i.e. the importance of trust is increased.

- “Because in a temporary thing you have got to do it fairly quickly and you will probably be friendly by the end of the job”.

- “We need to do it from the start. Be cooperative at the beginning”.

<table>
<thead>
<tr>
<th>Interview No. 28</th>
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<tbody>
<tr>
<td>- The Client discusses how a lack of stakeholder interaction and communication has a negative effect during the design phase of a project.</td>
</tr>
<tr>
<td>- “They will sit with a team of people in an area multi disciplinary and they still do not talk to each other”.</td>
</tr>
<tr>
<td>- This lack of interaction and communication subsequently limits the potential for relationships and trust to be developed.</td>
</tr>
<tr>
<td>- A proactive effort to increase stakeholder interaction and improve communication and develop strong relationships and trust would therefore be</td>
</tr>
</tbody>
</table>
- The client believes that an increased reliance on ICT has resulted in a reduced level of stakeholder interaction at a personal level.

- “We do not sit down and talk and interface to the degree we use to”.

- “That interpersonal face to face stuff is not there”.

- The client therefore recognises the importance of developing and maintaining interpersonal relationships (trust implied), and understands the role communication plays in this regard.

<table>
<thead>
<tr>
<th>Interview No. 31</th>
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<tbody>
<tr>
<td>- The Contractor believes the client appreciated the way they “get involved with them and problem solve”.</td>
</tr>
<tr>
<td>- This approach helped to develop a good relationship (and trust) between the contractor and the client. This was evidenced by the fact that the lines of communication became more open and cooperative as the project progressed and the relationships were established.</td>
</tr>
<tr>
<td>- “That whole communication thing is pretty flat and if we were sending out the documents or fax or RFI it would go to 6 or 7 people at once. Where it might have been fairly tiered at the start it quickly became flat straightaway”.</td>
</tr>
<tr>
<td>- This scenario shows how relationships and trust influence a project.</td>
</tr>
<tr>
<td>- It also shows how ongoing interaction influence future expectations and behaviours.</td>
</tr>
<tr>
<td>- The role that communication plays in developing relationships and trust is also highlighted.</td>
</tr>
<tr>
<td>- The influence of a benevolent approach in terms of developing relationships and trust is also highlighted.</td>
</tr>
<tr>
<td>- The importance of trust in terms of culture and team environment was also apparent. The Contractor agrees that the culture was quite participative. “From our side it was pretty good”.</td>
</tr>
<tr>
<td>- The Contractor discusses how for the most part all stakeholders worked well together.</td>
</tr>
</tbody>
</table>
- In the case of one stakeholder however, a lack of communication and interaction on his behalf, “caused a bit of friction and a few issues”.

- “There were a couple of times where it was a bit tense”.

- While the lack of a relationship with this particular consultant facilitated some issues, the good relationships between the other stakeholders helped to resolve them.

- “Anyway, everyone, we all worked very well together”.

- The Contractor discusses how poor communication on behalf of the client impacted on stakeholder relationships.

- “We could have been finished a lot earlier if things had been answered and organised and sorted out when they should have”.

- “There were a few issues that dragged on literally for a few months, so that has left a bit of a sour taste in our mouth”.

- These interactions would logically lead to a breakdown of trust to some degree, and impact on future attitudes and behaviours.

- The Contractor discusses one of his subbies and how they were stuffed around by the client.

- “he was one trade that has been stuffed around by the indecision. He has a sour taste in his mouth”.

- The indecision by the client would relate in some one way to communication, and hence the link between communication and relationships (trust implied) is highlighted.

- The relationship has obviously been negatively affected as a result of the interactions between the client and the subcontractor.

- The fact that he has a “sour taste in his mouth” implies that there has been some degree of trust breakdown, to the point where future attitudes and behaviours are likely to be influenced.

| Interview | - The client rep discusses how the culture and relationships on this project have |
No. 31

at times been challenging, with communication and interaction with the client influential in this regard.

- “I know there has been a fair amount of frustration. It is often difficult to interact with (this client) because they are fairly bureaucratic. It is often difficult to get answers out of us because there are many people involved in making the decision”.

- This shows how interaction between stakeholders influences relationships and trust.

- It also shows how effective communication and interaction is vital in terms of stakeholder interaction and ultimately project outcomes.

Interview No. 32

- The PM/QS discusses some of the issues that plagued this project both during the design stage and the construction stage.

- “There were frustrations, but I think if you compared it to any other project then I think you would find they would be similar frustrations to any other project”.

- “It could have been done better by the University (the client). But at the end of the day we got there, and it was a positive outcome”.

- “There were no major dramas on the whole job at all. It was lots of minor dramas”.

- This confirms that negative experiences and interactions are likely to be inevitable on any project.

- Relationships and trust would logically be influenced in this regard.

- Themes relating to communication were for the most part central to the negative events that did take place.

- “There were times when that whole communication process I guess fell over a bit”.

- “There were certainly times when communication was a little bit lacking, but a lot of the communication breakdowns were minor as opposed to a major communication breakdowns”.
- The relationships and interactions of the respective stakeholders (trust levels) would have been integral to resolving these negative events when they eventuated.

- However, apart from ultimately achieving a successful project, it is not entirely clear if all of the stakeholder relationships (trust) were fully maintained. There would have likely been some degree of trust break down.

- The PM/QS confirms that he likes to take a “very collaborative” approach to relationships on any project.

- “We like to work well. We like to work in with the design consultants, the builder, etc.”

- “It comes from a personal perspective. I suppose I am very mindful of a team approach as opposed to an individual approach”.

- The PM/QS therefore acknowledges the benefits that can be forthcoming from good relationships and trust between stakeholders, and the link between trust and project outcomes.

- He also understands that in the management of any project, building trust amongst stakeholders is important.

- This scenario also highlights that the initial intent of stakeholders is important, as are the individuals themselves and their attitudes and behaviours.

- Themes of communication and benevolence are also highlighted and recognised by the PM/QS as been important.

- “At the end of the day we wanted the project to be successful for everybody. I think in this instance it was particularly collaborative in terms of each individual’s input”.

- The PM believes that personal communication and discussion is still the best form of communication, rather than relying on email correspondence.

- “I would rather discuss it as opposed to sending an e-mail which can often be received abruptly, at the wrong point for the person who was sitting at the other end at a computer who might be doing something else”.

- This highlights the importance of personal interaction in terms of relationships, trust and communication.

- “You will get a lot more out of the telephone call in the terms of how the person deals with (what you are discussing)”.

- “I would rather talk to somebody and walk through it with them as opposed to sending them an e-mail”.

| Interview No. 33 | - In discussing collaboration with other members of the supply chain, the Architect believes, that from a practical perspective their internal processes were a hindrance to effective collaboration.

  - “We have internal quality assurance procedures here which in some way hinder collaboration in terms of transferring documents and so on”.

  - These QA procedures would to some extent limit the potential for relationships and trust to be developed through open and transparent communication, i.e. stakeholder interactions in this regard would influence trust levels.

  - The excessive control mechanisms would be counter-productive to the development of trust.

  - The Architect believes that in spite of some negative events, the relationships amongst the project team remained good.

  - “Quite a collaborative approach. There were some areas of adversary behaviour if you like but the team and the relationships in the team remained positive”.

  - Evident in this scenario is how stakeholder relationships and trust helped to resolve and overcome negative events when they did arise.

  - Themes of communication (“Collaboration”) were integral in this regard.

| Interview No. 34 | - The structural engineer believes that the culture on this project was “not a difficult culture”. Implied is the fact that there were good relationships and a level of trust, and this was positive in terms of project outcomes.

  - “Everyone was pretty cooperative. They tended to do the right thing”.

Scott Strahorn- 304294
- Implied also are themes of communication regarding cooperative behaviour, i.e. the link between cooperation (communication) and relationships/trust is implicitly made.

Summary of key themes

Relationships

Recognises the importance of communication in terms of good stakeholder relationships

Communication is integral in developing and improving relationships

Face-to-face communication is critical in establishing and maintaining relationships

“Number one preference is to go and see the client face to face” (Interviewee no 1)

Formal communication is also vital for documenting face to face discussions

Both formal and informal communication is important to relationships

Ditto

Face-to-face communication is desirable over non face-to-face communication as the human element is paramount in any relationship

Non face-to-face communication can lead to misinterpretation of meaning

Face-to-face communication is better than non face-to-face communication. Both are used.

The procurement method does drive the use of face-to-face or non face-to-face communication. Under traditional procurement, the preference for face-to-face communication is not always there (even though this form of communication is considered superior).

Informal communication is more conducive to building relationships, with formal communication the fallback when things go wrong.

Formal communication in the first instance is counterproductive to building good relationships.

Open and clear communication are essential traits for a good relationship
Open and transparent communication is key to a good relationship “transparency between each other on all issues” (No 8)

“A willingness to discuss things” (No 7) is important in terms of culture and relationship interactions.

“Monthly review meetings” and “contractor performance reports” (No. 7) are considered to be effective tools in the management of relationship interactions. “It’s a good and positive tool” (No. 7)

Regular and ongoing communication has a positive effect on relationships. “the client is next door. We are walking into their office every day and they are in our office every day” (No. 8)

Geographical proximity is significant in terms of building a relationship via regular and ongoing communication “we have an almost interconnecting corridor” “You can see them and you can go and sit down and talk to them” (No. 12)

A lack of communication plays a big part in poor relationships “With no communication, productivity and program are disadvantaged”. “Productivity comes from good communication” (No. 8)

A partnering approach builds relationships

People need to be happy to discuss things rationally for a relationship to succeed.

“open communication is good” (No. 13)

Trust

In order to develop trust amongst stakeholders, it is “best to be upfront, open and honest”. (No. 5)

Implied is how a lack of communication can lead to a break down in trust

Negative events

“try to keep resolutions of issues as informal as possible” “So talk before you write letters” (No. 7)

Informal communication is considered to be more effective, although formal communication still required to clarify discussions.
“Contractor performance report” “a really constructive way of addressing problems as well” (No. 7)

Communication is logically important when dealing with situations where trust levels have diminished

“Open communication” and “working together to solve problems” is important in terms of maintaining relationships when things go wrong

Communication is used to resolve conflict “A constructive debate to work out the best way to do it” (No. 8)

“We always went through the issues and partnered our way through all the problems” (no12)

“They tend to grow, little issues, if you do not resolve little issues as you go” (No 12)

Open communication is significant. “If there are issues, you have just got to bring them out in the open and discuss them” (No. 12)

Generally

“If there is no communication, a job will stop” (No. 8)

Communication is important for project success.
**Procurement type: Relational**

**Main theme code: Communication**

| Interview No. 2 | - Communication = Transparency  
|                 | - Despite an alliance arrangement being very collaborative, transparency can still breakdown. Breakdown in transparency = lost trust = failure in alliance arrangement  
|                 | - An alliance arrangement does not contain rules which explicitly dictate communications between the parties  
|                 | - A traditional fixed price contract sets out the rules by which the parties are to communicate  
|                 | - Communication is a key point at all levels  
|                 | - The greater project good approach will be taken by stakeholders in patent matters, but on latent issues there is a commercial imperative that will often lead to a lack of transparency.  
|                 | - Hence, commercial interests can influence communication between stakeholders, which can subsequently affect trust within a relationship  
|                 | - Email communication can be ineffective when people are busy.  
|                 | - Direct communication via the telephone or face-to-face is a lot more effective.  
|                 | - Effective communication is about dialogue, and emails are not conducive to the level of dialogue required in a collaborative world.  
|                 | - The delivery mechanism influences the effectiveness of communication.  
|                 | - An alliance world is different to the fixed price world in this regard, and some people cannot adapt to it.  
|                 | - If you do not empower people they cannot make decisions.  
|                 | - You cannot get projects done this way.  
|                 | - You need to trust each other and empower other project stakeholders.  
|                 | - The development of a long-term relationship demonstrates trust among the
respective parties.

- Regular communication via monthly meetings, as well as email and telephone conversations are important in developing a relationship.

- It is beneficial to develop the relationship beyond a purely business level.

- Open communication, trust, reliability, and capability are all factors that influence culture and facilitate the development of relationships.

- An open book style of communication encourages a one-team approach.

- Regular communication is important

- Early tender involvement aims to build relationships with tenderers, and encourages open and good communication.

- A “no surprises attitude” is also fostered within the relationship that subsequently demonstrates trustworthiness and reliable behaviour.

- Personal traits that would be undesirable when collaborating include:

- Secretive (untrustworthy / Not open with communication)

- The alliance arrangement encourages open communication.

- The alliance arrangement facilitates the development of stronger relationships (both in and out of the work place).

<table>
<thead>
<tr>
<th>Interview No. 4</th>
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</thead>
<tbody>
<tr>
<td>- One such Alliance resulted in a lot of disputes and issues. While the client believed they had good, committed people on their side, their alliance partner did not.</td>
</tr>
<tr>
<td>- The failure of the Alliance was ultimately due to poor relationships, poor communication, and a culture (within the alliance partner) that was not able to work collaboratively.</td>
</tr>
<tr>
<td>- In response to a poor relationship that had developed through a perceived lack of performance (competence), the client set out to improve the relationship with the respective stakeholder in order to improve the negative environment in which the project was operating.</td>
</tr>
<tr>
<td>- Regular meetings and persistent discussion (communication) allowed the</td>
</tr>
</tbody>
</table>
relationship to develop from bad to good.

- This also implies that developing a relationship through communication can repair lost trust.

- The client identifies communication as being important in terms of the human interaction required to ensure project success.

- The client identifies the importance of face-to-face communication in developing and maintaining relationships.

- The client identifies the importance of face-to-face communication when resolving conflict.

- Non face-to-face communication (e.g. an email) can even potentially contribute to more conflict. Without face-to-face contact, the benefits of dialogue and conversation are not available to the parties in conflict. Subsequently, without conversation, an incorrect position may be taken by either party.

- Any conflict must have a solution, it is just a matter of how you get there.

| Interview No. 6 | - Upfront negotiation was important and the contractor has therefore recognised the importance of open communication.  
- The Contractor recognises the importance of open communication, honesty and developing and maintaining relationships within the alliance framework.  
- A lack of communication, sharing of information, and meaningful input, between project stakeholders had a negative impact on the project.  
- The lack of communication and a close working relationship contributed to a poor project outcome. |
| Interview No. 9 | - The client PM identifies the cooperative approach of the stakeholders as being a significant factor in developing and maintaining a good relationship.  
- Communication is also identified as contributing to the success of the relationship and project.  
- This scenario demonstrates the lack of a good relationship, or conversely how an improved relationship and better communication might be able to overcome |
such a scenario and see improved overall project outcomes.

- The client PM confirms that good relationships can be developed when stakeholders display a decent intent and open communication.

- The client PM highlights the importance of effective and regular communication in relationships.

- Communication in this regard is also significant in terms of reaching an agreement when conflict needs to be resolved (trust repair).

- The client PM highlights the importance of communication in a relationship.

- A benevolent attitude is also important, whereby both parties put aside their own interests, and focus mutually on what is in the best interests of the project.

<table>
<thead>
<tr>
<th>Interview No. 10</th>
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<tbody>
<tr>
<td>- The client PM recognises the benefit of communication between stakeholders within the project environment.</td>
</tr>
<tr>
<td>- The client PM recognises the importance of communication and negotiation in developing and maintaining a good relationship.</td>
</tr>
<tr>
<td>- The client PM identifies the role of communication in resolving disputes.</td>
</tr>
<tr>
<td>- In considering communication, the client PM highlights the improved outcomes resulting from informal communication (human to human) rather than formal communication (email). This again emphasises the importance of relationships, and relationship interactions between stakeholders.</td>
</tr>
<tr>
<td>- The client PM again highlights the importance of communication, particularly communication on a personal one-on-one level.</td>
</tr>
<tr>
<td>- By choosing one-on-one communication, you can avoid the adversarial outcomes that can be the result when more formal forms of communication are adopted in the first instance i.e. “you don't always have to be firing a shot at someone”.</td>
</tr>
<tr>
<td>- The client PM makes the connection between a smaller team, communication and a cooperative approach. It is implied that the smaller team facilitates the development and maintenance of closer relationships, which in turn encourages everyone to work together to get things done.</td>
</tr>
</tbody>
</table>
- The client PM again highlights the importance of relationships, relationship interactions, and communication to the point where he believes it would be beneficial for the project if the contract included rewards to the contractor for demonstrating high levels of performance around these measures.

- The client PM again reinforces the importance of “person to person” communication in gaining a mutual understanding within a relationship.

<table>
<thead>
<tr>
<th>Interview No. 11</th>
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<tbody>
<tr>
<td>- The Contractor believes that they have at times in the past been negatively impacted when they have not correctly interpreted what it is the client wants, or how they want something to be done.</td>
</tr>
<tr>
<td>- Implied is the thought that an improved relationship and better communication may have seen such negative outcomes avoided.</td>
</tr>
<tr>
<td>- The Contractor confirms the significance of trustworthiness and communication to a positive relationship.</td>
</tr>
<tr>
<td>- Similarly, the Contractor identifies mistrust (lack of trustworthiness) and secrecy (not open communication) as characteristics of a negative relationship.</td>
</tr>
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<table>
<thead>
<tr>
<th>Interview No. 14</th>
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<tbody>
<tr>
<td>- The Contractor believes a good relationship is founded on the client effectively communicating their objectives for the project, with the Contractor then delivering in accordance with these objectives.</td>
</tr>
<tr>
<td>- Similarly, a failure by the Client to effectively communicate their objectives can be the foundation for a bad relationship.</td>
</tr>
<tr>
<td>- Hence the Contractor recognises the link between communication and relationships.</td>
</tr>
<tr>
<td>- The Contractor also highlights the fact that the Client does not always know what it is they want, and this can be the most important thing in terms of project success.</td>
</tr>
<tr>
<td>- The Contractor’s ability to determine these unknowns is subsequently significant.</td>
</tr>
<tr>
<td>- To this end, dimensions of relationships, relationship interactions and communication will be fundamental.</td>
</tr>
</tbody>
</table>
- The Contractor recognises the need for honesty and open communication within stakeholder relationships, particularly when problems arise throughout a project.

- In considering what is required to develop a good relationship, the Contractor identifies the need for effective communication, as well as honesty.

- In particular, effective communication and honesty need to be displayed from the outset, reinforcing the idea that the initial intent of project stakeholders is significant in terms of project success.

<table>
<thead>
<tr>
<th>Interview No. 15</th>
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<tbody>
<tr>
<td>- The EC recognises the role of communication, both formal and informal, in developing relationships between stakeholders.</td>
</tr>
<tr>
<td>- The EC highlights the role of communication in resolving disputes or overcoming problems. In particular, the point is made that the contract (control mechanism) can become a hindrance when trying to overcome problems. Better outcomes can be achieved when the contract is put aside, and sensible communication used instead.</td>
</tr>
<tr>
<td>- Trust breakdown is a logical result of negative outcomes. In highlighting the importance of communication in finding solutions to negative outcomes, the importance of communication in repairing lost trust is also identified.</td>
</tr>
<tr>
<td>- The EC again highlights the importance of communication in resolving disputes.</td>
</tr>
<tr>
<td>- The EC also believes project stakeholders recognise the importance of good relationships and as such in resolving disputes, will often act in such a way as to maintain a good relationship (demonstrate benevolence).</td>
</tr>
<tr>
<td>- The EC believes that Contractors now have a greater understanding of the client’s issues and therefore subsequently display a greater degree of understanding (benevolence) towards the client.</td>
</tr>
<tr>
<td>- This understanding would logically be enhanced by good relationships and open communication.</td>
</tr>
</tbody>
</table>
Summary of key themes

Communication = transparency

An alliance arrangement does not contain rules that explicitly dictate communications between the parties.

Communication is key at all levels

Commercial interests can influence communication between stakeholders, which can subsequently affect trust within a relationship

Direct communication via telephone or face-to-face is a lot more effective. Effective communication is about dialogue, and emails are not conducive to the level of collaboration required in a collaborative world.

The delivery mechanism influences the effectiveness of communication

Regular communication via monthly meetings as well as email and telephone conversations are important in developing a relationship

Open communication influences culture and facilitates the development of relationships

An open book style of communication encourages a one team approach

Regular communication is important

Been secretive (not open with communication) is considered to be a personal trait which is undesirable when collaborating

The alliance arrangement encourages open communication

The failure of the alliance was ultimately due in some part to poor communication

Regular meetings and persistent discussion allowed the relationship to develop from bad to good. i.e. developing a relationship through communication can repair lost trust.

Communication is important in terms of the human interaction required to ensure project success.

Face-to-face communication is important in developing and maintaining relationships, and also when resolving conflict
Non face-to-face communication can potentially lead to more conflict, as the benefit of dialogue and conversation are lost, and an incorrect position may be taken by either party.

Upfront negotiation was important

The contractor recognises the importance of open communication within the alliance framework

A lack of communication between stakeholders had a negative impact on the project.

The lack of communication and a close working relationship contributed to a poor project outcome.

Communication is identified as contributing to the success of the relationship and project.

The client PM confirms that good relationships can be developed when stakeholders display open communication

The client PM highlights the importance of effective and regular communication.

Communication is significant when reaching an agreement in times of conflict.

Communication is important in a relationship

The client PM recognises the importance of communication and negotiating in developing and maintaining a good relationship and when resolving disputes.

Improved outcomes are realised with informal communication (human to human) rather than formal (email) communication.

Communication is particularly important on a personal one-on-one level. By choosing one-on-one communication, adversarial outcomes that result when more formal forms of communication are adopted in the first instance can be avoided.

A smaller project team is more conducive to open and effective communication

The client PM again reinforces the importance of “person-to-person” communication in gaining a mutual understanding within a relationship

The contractor believes they have in the past been negatively impacted when they have not correctly interpreted what exactly it is the client wants. Communication may have seen this negative outcome avoided.

Communication is significant to a positive relationship
Secrecy is considered to be characteristic of a negative relationship

A good relationship is founded on the client effectively communicating their objectives. Similarly, a failure to effectively communicate objectives can be the foundation of a bad relationship

The client does not always know what they want. The contractor's ability to work out what the client wants is subsequently significant. To this end, dimension of communication will be fundamental.

The contractor recognises the need for open communication particularly when problems arise.

Effective communication is required to develop a good relationship, and in particular needs to be displayed from the outset.

The EC recognises the role of both informal and formal communication in developing relationships

Communication also helps resolve disputes. Better outcomes can often be achieved when the contract is put to one side, and sensible communication used instead.
APPENDIX 7- SAMPLE CONCEPTUAL MODELS FROM PAIR WISE COMPARISON
Example conceptual model- Traditional procurement (risk)
Figure 3. Example conceptual model- Relational procurement (risk)

**INPUT CHARACTERISTICS**
- Appropriate risk apportionment
- Shared risk
- Good relationships
- Mutually beneficial approach
- Competent team members
- Poor risk apportionment
- Bad relationships due to risk apportionment
- Excessive controls
- Prioritization of individual interests (lack of benevolence & integrity)
- Risk management
- Sharing of risks
- Risk profile

**PROCUREMENT TYPE:**
Relational

**OUTPUT CHARACTERISTICS**
- Relationships (good/bad)
- Project outcomes (good/bad)
- Total project cost
- Improved project timeframes (particularly on high risk projects)
- Mutual benefits
- Future relationships & actions
- Stakeholder actions/behaviours
- Procurement approach
- Limited ability for individual parties to manage risk
- Trust (high/low)
- Resentment
- Trust breakdown
APPENDIX 8 - EXAMPLE OF PAIR WISE COMPARISON OUTCOMES
Figure 4. Example pair wise comparison (risk)
APPENDIX 9- ECAM HIGHLY COMMENDED PAPER AWARD
Engineering, Construction and Architectural Management

2013 Highly Commended Paper Award

is awarded to Scott Strahorn

for the paper Trust and the <IT>Project Management Body of Knowledge</IT>

Tony Roche
Publishing Director
Emerald Group Publishing Limited

Simon Linacre
Head of the Emerald Literati Network
Emerald Group Publishing Limited

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