

TRUST, MISTRUST AND DISTRUST IN ALLIANCING

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Despite the success of many alliancing projects in Australia and New Zealand, there has been an increasingly decline in the use of this procurement method for infrastructure projects by the public sector. Research has found that trust, mistrust and distrust between the Alliance Leadership Team (ALT) and Alliance Management Team (AMT) were the biggest issues that impacted on the effectiveness of the alliance. There is currently a discrepancy in the nomenclature used for trust terminologies, especially the understanding of mistrust and distrust in project relationships which is a gap for research. Current research on alliancing has generally been very positive in the potential for alliancing contracting to facilitate trust within the project however, trust conditions are volatile under different business situations within the gain share and pain share modes, therefore, the criticality of different trust attributes under mishaps especially, is also another gap within research. The Analytical Hierarchy Process (AHP) is used to examine the criticality of different trust attributes from the alliancing participants' surveys. Results demonstrate that only in a gain share mode cognitive-affect based trust is preferred for both the conditions of trust and mistrust. However, in a pain sharing mode, cognitive based trust prevails over cognitive-affect, system and affect based trust for the conditions of both trust and distrust. This research demonstrates that the values of team work and relational bonding only occurs as a lag effect indication of the cost performance of the project and has little effect on governing the attitude and culture of which the people within the construction industry operates, in terms of organizational change. Unless there is a change in the fundamental legal framework of which business is conducted under common law, culture and the continuing simultaneous use of other non-relational procurement systems may determine the eventual behavior of any business transaction.

Keywords: alliancing, analytical hierarchy process, trust, mistrust, distrust

INTRODUCTION

Despite the success of many alliancing projects in Australia and New Zealand, there has been an increasingly decline in the use of this procurement method for infrastructure projects by the public sector. Research has found that trust, mistrust and distrust between the Alliance Leadership Team (ALT) and Alliance Management Team (AMT) were the biggest issues that impacted on the effectiveness of the alliance (She et al. 2012; Mills et al. 2011). In 2013, the Alliance Association of Australasia (AAA) announced the amalgamation of the Alliancing Association of Australasia (AAA) with Infrastructure Partnerships Australia (IPA) “due to a significant decline in the number of collaborative contracts used particularly in the public sector in Australia” (Alliancing Association of Australasia 2013). With global economics changing at a rapid pace, people become more rational and therefore trust less whilst; at the same time cooperation can be motivated through manifold devices without trust

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(Cook et al. 2005). The principle objective of Alliances is to align team member expectations so that they work together for the benefit of the project however, the eventual amalgamation of AAA as a result of a decline in this procurement use demonstrates that the gain share and pain share commercial arrangement is insufficient for aligning behaviours and values in team work.

Current research on alliancing has generally been very positive in the potential for alliancing contracting to facilitate trust within the project. Walker et al (2002) conducted an empirical case study on the National Museum of Australia to provide a longitudinal view of people's enthusiasm and commitment in project alliancing as opposed to Business as usual (BAU) projects. Results demonstrated the cross-team helped and supported each other to overcome problems rather than reverting to blame-laying and associated administrative effort to document and support arguments for laying blame or deflecting blame. Ibrahim et al (2013) examined fifteen key indicators that have a strong influence towards determining the success of team integration in construction projects and then validated the key indicators on alliancing projects in New Zealand. They found that the top four indicators were free flowing communication, single team focus and objectives, commitment from top management and trust and respect. These indicators infer towards the structure of the alliancing contracting collaborative team; namely the relationship between the ALT and the AMT. Reed and Loosemore (2012) proposed a theoretical model of cultural shock which helps to explain the transition process into alliance projects. However, trust conditions are volatile under different business situations (Lindenberg 2000), within the gain share and pain share modes (She et al. 2012). Therefore, the criticality of different trust attributes under these situations between the ALT and AMT are unknown. This research aims to find the dominant attributes affecting trust, mistrust and distrust within pain share and gain share mode under the mishap situation within alliances. Mishaps can be intentional or unintentional however it occurs commonly in any complex project and it is essential to understand how these trust conditions affect the effectiveness of the relationship between governance and management.

THE STORY OF ALLIANCES

Alliances are complex projects with high uncertainties in risks. However, in an alliance, both the contractual structure and team dynamics are non-adversarial as all the parties forfeit the right to litigate in an event of a dispute (She et al. 2012). In alliancing each alliance member places their profit margin and reward structure "at risk" so the entire alliance entity either benefits together or lose all known as pain share and gain share (Walker et al. 2002). The ALT is in charge of the strategic decision making of the project as well as supporting the AMT team whilst the AMT is in charged with the operation of the project. Both AMT and ALT would have representatives from both the client and contactors' side to facilitate equity, knowledge as well as collaborative spirit in decision making.

In an empirical research by Mills et al. (2011) a range of factors has been identified where AMT and ALT performed above and below expectations. Overall, the respondents were more critical of the performance of the ALT with more than two thirds of respondents believing that the ALT did not perform above expectations. The results highlighted that ALT need to perform not only at strategic levels but also be proactively involved in project issues and providing supportive operational environments to delivery successful project management (Mills et al. 2011). The recent move towards the amalgamation of AAA with IPA as mentioned before clearly

signals a real problem for achieving true alliancing outcomes as perceived among the owners. It is then important to understand the difference between the attributes of trust, mistrust and distrust that exists under pain and gain share modes in order to truly integrate the alliancing philosophy into the principles of relational contracting.

Trust, Mistrust and Distrust

There is currently a discrepancy in the nomenclature used for trust terminologies, especially the understanding of mistrust and distrust in project relationships within the construction industry. This is a gap in research and requires a re-evaluation of current literature. Trust has been defined by different scholars over the years as predictability on human behaviour. For the nature of the construction industry, which is heavily adversarial and calculating, Robinson's (1996) definition is still the most applicable, in that "trust is one's expectations, assumptions, or beliefs about the likelihood that another's future actions will be beneficial, favourable, or at least not detrimental to one's interest." Using the encapsulation interest view of trust, it is trust based on mutual party's belief in encapsulating each other's interests through repetitive interactions and monitoring of behaviour (Cook et al. 2005).

Researchers within the construction domain have often used the term mistrust as the opposite of trust (Wong et al. 2008; Smyth and Thompson 2005). However, it is a misconception to view mistrust as an opposite of trust. Legitimate mistrust is the perceived likelihood that a potential or actual transaction partner's interests are not aligned with one's own interests (Lindenberg 2000). Robinson's (1996) definition of trust above allows legitimate inherent mistrust to co-exist with trust. Mistrust can occur in a positive state of a relationship and may even assist in the building of trust as parties communicate more openly regarding potential issues before the commencement of the partnership.

Distrust, which is the negative state of trust is understood to be the "expectation that others will not act in one's best interests, even engaging in potentially injurious behaviour" (Lewicki et al. 1998) and the "expectation that capable and responsible behaviour from specific individuals will not be forthcoming" (Lewicki et al. 1998). Mistrust allows doubt and hidden agendas but this does not necessarily imply that there is serious malicious suspicion. Mistrust can transform into distrust through miscommunication, misunderstandings and untimely resolution of issues both explicitly and implicitly known to one or both parties.

The attributes of trust have been classified under three main categories; system based trust, cognitive based trust and affect based trust. These categories are briefly discussed below:

System based trust: Can also be known as institution-based trust legal systems, conflict management and cooperation, systems regulating education and professional practice were suggested as tools to sharp trust in institutions (Rousseau et al. 1998). The attributes under system based trust include contracts and agreements, communication systems, organizational policy, adopt ADR, reputation, satisfactory terms (Wong et al. 2008).

Cognition Based trust: members cognitively evaluates the competence of other project team members with the available information (Morrow et al. 2004). The attributes under cognitive based trust include performance, consistency, competency, problem solving, reliability, experience and integrity (Wong et al. 2008).

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Affect based trust: this trust is grounded in reciprocal interpersonal care, concern and emotional bonds (McAllister 1995). In affect based trust situations, parties rely on instincts, intuitions and feelings to determine the other party's trustworthiness (Morrow et al. 2004). The attributes under affect based trust include relational bonding, thoughtful, emotional investment, compatibility, long term relations (Wong et al. 2008).

Trust based on communication, information flow, sincerity, fairness and financial are classified under cognitive based trust (Wong et al. 2008) however the action of communication involves cognitive processing but how the message is being received by the receiver is a perception on the receiver's side and can be influenced by instincts, intuitions and feelings to determine the trustworthiness of the message (Lantolf & Thorne 2006), hence, it is logical to reclassify these trust attributes under the category of Cognitive-affect based trust for the purpose of this research. Cognitive-affect based trust is the most important trust for alliancing as it underpins the alliancing philosophy.

By integrating the core concepts of alliance contracting with the fundamental underpinning of trust conditions, it may be possible to understand the complexity of trust in stakeholder relationships and overcome the confusion with trust, mistrust and distrust.

RESEARCH METHODS

Analytical Hierarchy Process (AHP) is used for this study as trust is volatile therefore the relationship between constructs can only be viewed in a probability sense just like AHP was successfully used to determine the factors that may affect the state of market volatility. One of the major advantages of AHP is that it does not always require a statistically significant sample size (Dias and Ioannou 1996). AHP uses pairwise comparisons between quantitative or qualitative criteria to assess the relative importance of each criterion (Saaty 1980). The qualities (or levels) of different attributes are not directly compared. In extreme cases, only one single respondent is sufficient (Saaty 1980) as respondents are not asked to make choices between all criteria and thus are less likely to adopt mental short cuts by concentrating disproportionately on one attribute or level.

In order to identify the important trust attributes that had the most impact on trust, mistrust and distrust under pain share and gain share, a questionnaire was prepared based on the results of interview responses from previous empirical research as well as available literature on trust. By using the analytical hierarchy process (AHP), prioritized numerical scales are generated representing the relative impact of the perceived trust attributes that affected trust, mistrust and distrust within pain and gain share modes under the mishap situation.

Measuring the consistency in Judgement

In the application of AHP, inconsistency in pairwise comparisons may appear as a result of factors such as lack of adequate knowledge, improper conceptualization of hierarchy and even lack of statistically sample size (Saaty, 1980). A consistency ratio is generated for each prioritized scale upon completion of carrying out the pairwise comparison. The consistency ratio is defined as the consistency index for a particular set of judgments divided by the average random index as shown in the equation:

$$CI = (\lambda_{\max} - n) / (n - 1) \text{ and } CR = CI / RI$$

Where λ_{\max} is maximum eigenvalue, n is the size of the judgement matrices, RI is the random index. The values of RI for different sizes of judgment matrices are found in the existing studies including in Saaty's works (1980). Based on the various numerical studies, Saaty (1980) stated that for the inconsistency to be tolerable, the consistency ratio (CR) must be less than or equal to 0.10. If this condition is not fulfilled, a revision of the comparisons is recommended.

The framework for Data Analysis

The objective is to find out what trust attributes have the biggest impact on trust, mistrust, and distrust within pain and gain share under the mishap situation therefore the main objectives, trust, mistrust and distrust were placed at the left-most side of the analytical hierarchy as shown in Fig.1. The four criteria are: cognitive-based trust, cognitive-affect based, system based trust and affect based trust. Each criterion was then further subdivided into their relevant sub-criteria which are the trust attributes as shown each figures below.

In this study, the problem involved using AHP at the two levels: (1) estimation of the relative importance of the main criteria, (2) estimation of the relative importance of each sub-criterion on the criteria.

Figure 1 above demonstrates that mistrust can be present under the gain share mode within a mishap situation. Mistrust is any likelihood of misaligned goals, which can still occur in a gain share mode as the final Key Results Area is affected by the perception in the potential gain share between owners and non-owners which do not necessary have an equal risk allocation. Moreover, when using the dispositional view of trust, parties that have low levels of trust as a result of past experiences from non-alliancing projects, would be suspicious under any situation that may arise doubt. Under a mishap situation, it would aggravate personal bias in assessing the situation. However, under a pain share mode, distrust can be present rather than mistrust when using the encapsulated interview view of trust, as there is a high probability that conflict of interest would surface in the process of mitigating cost overrun when making decisions on methods to resolve problems.

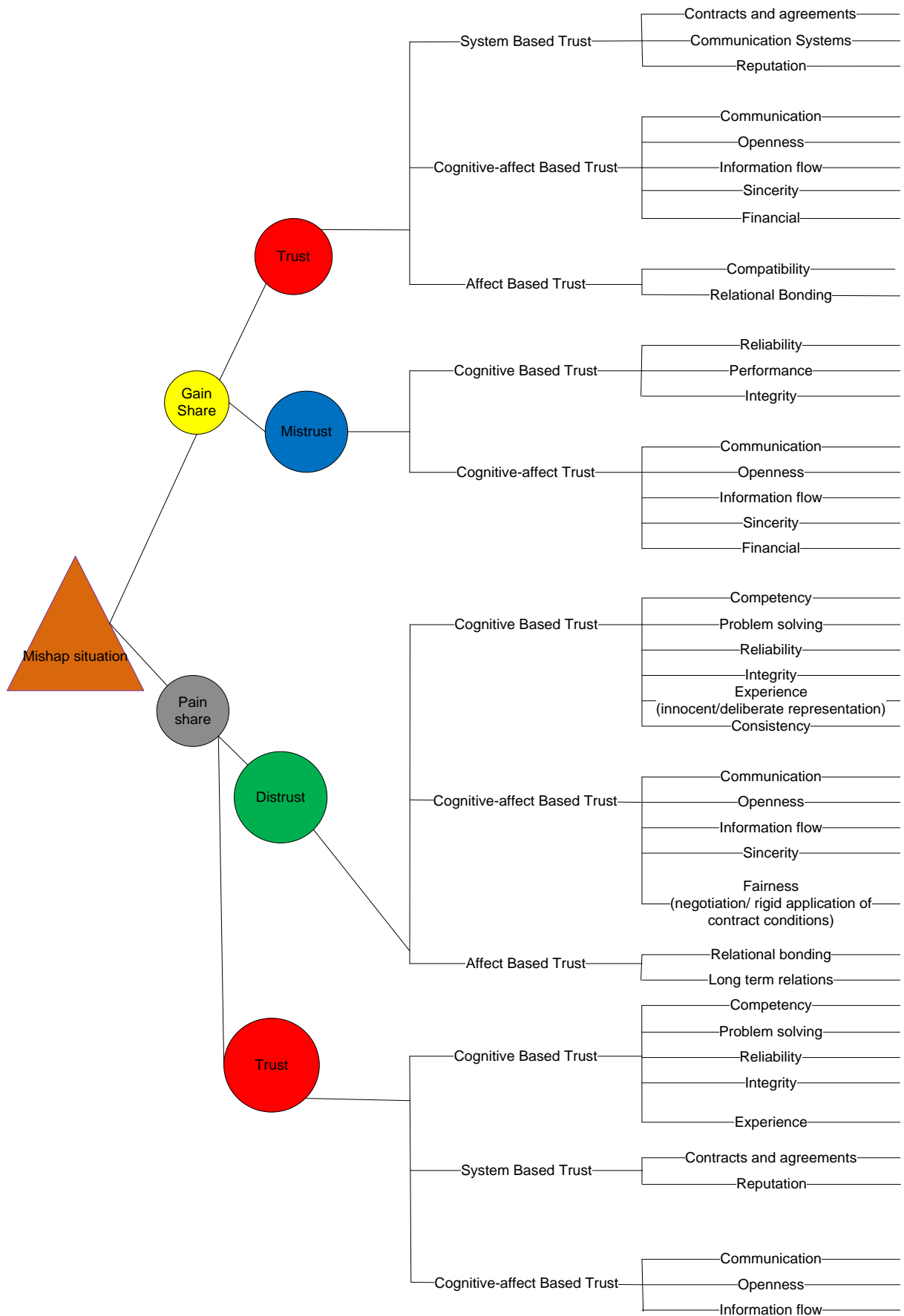


Figure 1: Hierarchy structure of criteria impacting on trust, mistrust and distrust under gain

share and pain share modes under the mishap situation

Data Collection

A total of forty surveys were distributed to a list of alliance participants in Australia and New Zealand and all forty surveys were completed and returned. The target group of respondents was identified mostly by means of personal contacts and the responses were collected after a clear discussion on the questions and target research outcomes. Table 1 shows the profile of respondents.

Table 1: Summary of Respondents' profile

Field of Work	(%)	Years of Experience
Alliance General Manager	14	>20+
Design Manager	13	>10+
Construction Manager	13	>15+
Approvals/Consenting Manager	25	>20+
Stakeholder Manager	15	>20+
Client side representative	20	>20+

Data Analysis

A nine-point scale was used for respondents to compare the trust attributes in pairs. Table 2 below shows the AHP pairwise comparison scale. The responses were programmed and then normalised into an Excel spread sheet for implementation of the AHP process as shown in the next section titled Results and Discussion.

Table 2: AHP pairwise comparison

Value rating for Judgements	Linguistic Judgments
1	Elements are equally preferred
3 or (1/3)	One is moderately preferred to the other
5 or (1/5)	One is strongly preferred to the other
7 or (1/7)	One is very strongly preferred to the other
9 or (1/9)	One is absolutely preferred to the other

Note: 2, 4, 6, 8 are intermediate judgmental values between adjacent scale values

RESULTS AND DISCUSSION

The following Tables 3, 4, 5 and 6 demonstrate the final AHP weights of every sub-criterion and criteria under the gain and pain share modes within the mishap situation after the normalisation of all the individual respondents' AHP calculations.

Table 3: Weightings for Trust within Gain Share under Mishap Situation

Goal	Criteria	Weighting	Sub-criteria	Weighting
Trust	System based trust	0.22	Contracts and agreements	0.27
			Communication systems	0.43
			Reputation	0.3
	Cognitive-affect based trust	0.55	Communication	0.2
			Openness	0.25
			Information Flow	0.19
			Sincerity	0.24
			Financial	0.12
	Affect based trust	0.23	Compatibility	0.34
			Relational Bonding	0.66

Table 3 above shows that under the gain share mode cognitive-affect based trust has the highest weighting of 0.55 and has the most impact on trust with the sub criterion of openness (with the weighting of 0.25) being the most preferred out of the pairwise comparison. System based trust has the lowest weighting of 0.22 with the sub criterion of contracts and agreements being the least preferred out of the pairwise comparisons. It is interesting to note that even for mistrust as shown below in Table 4, it is still cognitive-affect based trust that has the most impact under gain share.

Table 4: Weightings for Mistrust under Gain Share within Mishap Situation

Goal	Criteria	Weighting	Sub-criteria	Weighting
Mistrust	Cognitive based trust	0.45	Reliability	0.26
			Performance	0.27
			Integrity	0.47
	Cognitive-affect based trust	0.55	Communication	0.2
			Openness	0.22
			Information Flow	0.2
			Sincerity	0.28
			Financial	0.1

Table 4 above shows that under the gain share mode cognitive-affect based trust has the highest weighting of 0.55 and has the most impact on mistrust with the sub criterion of sincerity (with the weighting of 0.28) being the most preferred out of the pairwise comparisons. Cognitive based trust has a slightly lower weighting of 0.45 with the sub criterion of integrity being the most preferred out of the pairwise comparison.

Table 3 and Table 4 results demonstrate that under gain share, openness and integrity have the most impact on trust and mistrust respectively and the perception of cognitive-affect based trust overall prevails over system based trust and affect based

trust. However, for pain share it is cognitive based trust that has more impact over system and cognitive-affect trust as shown by Table 5 and 6 below.

Table 5: Weightings for Distrust within Pain Share under Mishap Situation

Goal	Criteria	Weighting	Sub-criteria	Weighting
Distrust	Cognitive based trust	0.43	Competency	0.13
			Problem solving	0.34
			Reliability	0.15
	Cognitive-affect based trust	0.36	Integrity	0.19
			Experience	0.07
			Consistency	0.11
			Communication	0.13
			Openness	0.16
			Information Flow	0.15
			Sincerity	0.17
	Affect based trust	0.21	Fairness	0.39
			Relational Bonding	0.46
			Long term relations	0.54

Table 5 above shows that under the pain share mode, cognitive based trust has the highest weighting of 0.43. It has the most impact on distrust with the sub criterion of problem solving (with the weighting of 0.34) being the most preferred out of the pairwise comparisons. Affect based trust has the lowest weighting of 0.21 with the sub criterion of relational bonding being the least preferred (with the weighting of 0.46) out of the pairwise comparison with long term relations which has a weighting of 0.54. It is interesting to note that fairness with the weighting of 0.39, is the most preferred criterion under cognitive-affect based which has a weighting of 0.36 under pain share whilst it was sincerity under gain share for mistrust. This means that the alliancing participants still prefer justice rather than sincerity in a mishap situation, overriding the alliancing spirit of 'no blame' culture.

The distinction between mistrust and distrust is also highlighted by the difference in this preference. Mistrust is any likelihood of misaligned goals which can also occur in gain share as the final Key Results Area is affected by the perception in the potential gain share between the owners and non-owners which do not necessary have an equal risk allocation therefore sincerity is important for the relationship between teams. Distrust is the perception that one party's action will harm the other party and therefore under pain share within a mishap situation, alliancing parties feel that fairness can protect their best interests as it is difficult to determine whether mishaps are intentional or occur purely by professional misjudgement. However, under pain share it is still problem solving which has the most impact for trust like it is for distrust, as shown in Table 6 below.

Table 6: Weightings for Trust within Pain Share under Mishap Situation

Goal	Criteria	Weighting	Sub-criteria	Weighting
Trust	Cognitive based trust	0.51	Competency	0.22
			Problem solving	0.37
			Reliability	0.18
			Integrity	0.14
			Experience	0.1
	Cognitive-affect based trust	0.33	Communication	0.3
			Openness	0.5
			Information flow	0.2
	System based trust	0.16	Contracts and agreements	0.37
			Reputation	0.63

Table 6 above shows that under the pain share mode, cognitive based trust has the highest weighting of 0.51. It has the most impact on trust with the sub criterion of problem solving with the weighting of 0.37 being the most preferred out of the pairwise comparisons. System based trust has the lowest weighting of 0.16 with the sub criterion of contracts and agreements being the least preferred with the weighting of 0.37 out of the pairwise comparison with reputation which has a high weighting of 0.63.

It is interesting to note that openness with the weighting of 0.5, is the most preferred criterion under cognitive-affect based, which has a weighting of 0.33 under pain share for trust whilst it was also openness with a weighting of 0.25 under gain share for trust. This means that the alliancing participants perceive openness as the precondition for both pain and gain share performance. The expectation for openness under pain gain is much greater than the expectation for openness under gain share which demonstrates that there are much higher levels of suspicion under pain share than gain share within a mishap situation. This questions whether trust is facilitated through the alignment of goals from the risk allocation of the gain share and pain share commercial arrangement.

CONCLUSIONS

Trust is volatile under the gain share and pain share risk allocation arrangements in alliances. In a mishap situation, cognitive-affect based trust is only preferred under a gain sharing mode for the conditions of both trust and mistrust but in a pain sharing mode, cognitive based trust mentality prevails over cognitive-affect based trust, system and affect based trust for the conditions of both trust and distrust. This research demonstrates that the values of team work and relational bonding only occurs as a lag effect indication of the Total Output Cost performance and has little effect on governing the inherent attitude and culture of which the people within the construction industry operates. Unless there is a change in the fundamental legal framework of which business is conducted under common law, cultural and the continuing simultaneous use of other non-relational procurement systems will determine the eventual behaviour of any business transaction.

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