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UNIVERSITY OF SOUTHAMPTON

FACULTY OF BUSINESS & LAW, SCHOOL OF MANAGEMENT

The Role of Conflict & Negotiation in the Complexity of Projects

by

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Thesis for the degree of Doctor of Philosophy

February, 2012

To My Family

Abstract

Projects are pervasive and disparate spanning a plethora of domains. Most projects are unified by certain characteristics regardless of the sector or industry to which they belong i.e. time & budget limitedness, a concern for quality, and a goal orientation. Although, projects have been around for a longtime, the phenomenon of conflict in projects gained interest around the 1960s with the introduction of the matrix form of organization. However, out of all the research papers on project centric conflict between 1960 to 1980 time period, only one is empirically grounded and that too focused on IT projects. Surprisingly, the findings put forward during this time period are to date considered valid and propagated by most project literature as universally true. Several other studies have contributed peripheral contributions to the project conflict literature, however, no study has focused on building an understanding of why and how conflicts arise on projects, how they are managed, and affects they create within projects.

Recent concerns pertaining to project failures, despite the existence of well-defined problems and toolsets, gave birth to an ESRC funded research network named ‘Rethinking Project Management’. Whose members in examining the ontological groundings of project management identified several areas of interest for future research in project management; one of which is complexity. The present study therefore focuses on integrating the concerns of conflict & negotiation within the context of project complexity.

Every research has its philosophical bearings. This study is ontologically objectivist and epistemologically subjectivist – consequently the axiology is subjectivist as well. This study accepts a Critical Realist view of the world and perceive the conceivable knowledge about this world to be subjective in nature. As the study is concerned about understanding the processes through which conflict & negotiation reify and interplay within a project the objective is not to find generalizations

but rather to seek out patterns of occurrences and to build explanations. The methodology followed in the study is mixed, borrowing from both positivistic and constructivist ideologies. The survey methodology is used to, in loose terms, cast a net and capture the status quo. Results of the survey supplement the literature review driven a priori assumptions and seek out context embedded variables that the literature has not touched upon. Findings from the survey contribute to the succeeding case study methodology, which inquired into their detail through the use of interviews.

Data for the study was collected between March through August 2010. During the first phase of the study 86 questionnaires were filled from 73 different projects. The survey data was analyzed using aggregate statistical techniques and a thesaurus based automated coding software named Leximancer. Results of the survey indicate that all projects surveyed had experienced some form of conflict and used at least one type of negotiation technique. A large number of projects faced conflicts related to land access, political pressures, time, interdepartmental relationships, and availability of resources. Project behavior when experiencing conflict exhibits a theme of delay, slowness, and work stoppages; there are also negative effects on group cohesion and productivity. The respondents described projects experiencing conflict as challenging, time consuming, delayed, and difficult. The data also revealed several useful patterns within projects experiencing conflicts. Additionally, baseline data for project complexity was captured using Shenhar and Dvir's Diamond Approach from all the projects surveyed. Findings, from the survey contributed to the study by providing preliminary answers to each of the research questions asked. Data gathered as a result of the survey contributed significantly to the design and orientation of the case study interviews.

The second phase of the data collection involved implementation of the case study methodology. Personnel at various levels of nine projects, one government consultant, and a tribal elder were interviewed, for a total of thirty interviews. Additionally, six meetings on one of the projects, and two movie filming sequences were observed. Published and non-published reports on all the projects were examined. Interviews were captured using causal-maps (a cognitive mapping technique) and short notes. The causal-maps were captured using Banxia Decision Explorer and later refined using Cmap (an open-source mapping software). Each project's

complexity measurements were taken and compared against the complexity baseline developed as a result of the survey.

Results from the case study reveals certain patterns of behavior on the projects, specifically in the interactions taking place between a project and its principle organization, peers, and subordinates. Additionally, I find that quality plays the most active role in project conflict & negotiation and contributes significantly to project complexity because of its interconnection to other concepts and the recursive nature of the connections it spawns. Some factors that were reported by the survey as contributing significantly to project complexity and project conflict & negotiation were disqualified and a foundation laid for further inquiry into the role played by conflict & negotiation in project complexity.

In concluding the study the data is first discussed through the lens of Jürgen Habermas' (1984) Theory of Communicative Action (TCA) and is followed by a general discussion on the data. The study concludes with a discussion on the possible future work that could result from this work.

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Declaration Of Authorship

I, Saleem Gul, declare that the thesis entitled ‘The Role of Conflict & Negotiation in the Complexity of Projects’ and the work presented in the thesis are both my own, and have been generated by me as the result of my own original research. I confirm that:

- this work was done wholly or mainly while in candidature for a research degree at this University;
- where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
- where I have consulted the published work of others, this is always clearly attributed;
- where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
- I have acknowledged all main sources of help;
- where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;

Signed:

Date

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Chapter 1

Introduction

1.1 Preface

Considering the fairly recent history of the discipline, literature on project management has come a long way. The body of work constituting project management's knowledge base is not easy to classify or categorize, however, a concern that traverses and unifies the various categories of development taking place in project management is a focus on the natural consequence of interactions involving humans e.g. conflict & negotiation. And is arguably an area where much work is still needed in the context of projects (see Section 2.6).

Projects conflict for various reasons ranging from the sublime to the ridiculous. Whatever the underlying reason, such conflicts are not without consequence and often result in some form of negotiated action, aimed at either resolving the conflict or preventing its consequences from spreading. The complex nature of reality that permeates the very fabric of all business activities leads us to quickly dispel any thoughts of linearity and adopt a view centered around dynamism. Thus, we are confronted with a complex reality where A does not simply lead to B, but B could lead to C, D, E, etc., any of which could loopback to A and could give rise to further consequences such as F, G, H etc. and so on; in short its a complex, messy, intertwined, and entangled affair at best. Thankfully though, the protagonists are able to function within this reality and do so marvelously, for this complex reality is not without order, rather it lies somewhere comfortably between predictability and chaos (see Section 2.7) i.e. exhibiting predictability in the short-run and unpredictability in the long-run.

This study explores these finely ingrained interconnections within complex projects and provides an explanation to what happens? why and how it happens? and what happens then?

1.2 Thesis Aims and Scope

The review of literature presented in Chapter 2 builds the case that conflict & negotiation within project management is a neglected and under-theorized area of study. What little literature that does exist is indicative of a dearth of depth in the writings, a lack of empirical grounding, a predominant North American and Western European focus, and baseless generalizations. This study situates itself well against these concerns and seeks to develop a greater understanding of the role of conflict & negotiation within the complexity of projects.

Table 1.1: Research Objectives & Questions

Primary RO: To determine the nature of relationship that exists between conflict & negotiation and project complexity.	Primary RQ: Do and negotiations make a project complex, or is it that projects that are already complex have more conflicts and negotiations?
RO1: To identify the type and nature of intrinsic factors contributing to conflict & negotiations within projects and the nature of their contribution.	RQ1: What drives project conflicts & negotiations and how?
RO2: To examine how projects are affected by conflicts & negotiations.	RQ2: How do projects behave in the presence of conflict and negotiated actions? And is there a pattern to this behavior?
RO3: To explore the role of culture in how projects experience conflict & negotiate.	RQ3: Does a project having a heterogeneous cultural makeup experience conflict differently than a project with a homogenous cultural makeup, and if so how?
RO4: To explore the effectiveness of project teams in situations of conflicts & negotiations.	RQ4: How does a project team working in a project experiencing conflicts manage the conflict? What negotiation tactics do they use, when do they use them, and why?

The work presented in this thesis is situated in the tribal and non-tribal regions of the Khyber Pakhtunkhwa Province of Pakistan. The thesis presents a culturally embedded look from the perspective of the project management teams into how

projects in the region experience conflicts and participate in negotiations during their interactions with the tribes, contractors, and other third parties.

The research questions and associated objectives held by this study are presented in Table 1.1.

1.3 Brief Outline of Research Methodology and Methods

This study adopts a Critical Realist philosophical stance and follows a mixed methodology using a survey followed by a case study. The survey data is used to explore the regional status quo and informs the succeeding case study. The objective of the case study is to further explore the findings reported by the survey and to create in-depth explanations of the phenomenon of interest.

The method used during the survey implementation is that of a structured interview in the form of a questionnaire, while the case study relies on interviews, observations, and archival data examination.

1.4 Thesis Structure

This thesis is structured into seven chapters. A brief outline of each is provided below:

Chapter 1 introduces the study, provides a summary of the extant work, identifies the aim and scope of the study, presents the research objectives and research questions, outlines the methodology, and provides a brief on the structure of the study.

Chapter 2 presents the literature reviewed as a part of this study. The discussion begins by reviewing the literature on conflict & negotiation in general and then moves to a discussion on conflict & negotiation in projects. Elements of complexity are then discussed similarly, such that the chapter goes from a discussion on complexity in general to complexity within projects. The chapter concludes with a presentation of a theoretical and conceptual frameworks of the study and the research questions driving this study.

Chapter 3 presents a discussion on the underlying philosophical stance adopted by this study and builds a case for the methodology and methods to be employed by the study.

Chapter 4 extends the discussion presented in Chapter 3 and operationalizes the methodologies and methods employed and establishes their relationship to the research questions posed by the study.

Chapter 5 presents the data analysis of the data collected as a result of the implementation of the survey methodology employed by the study. The analysis presented is a mix of aggregate statistics and lexical analysis of the responses collected in response to the study's research questions.

Chapter 6 builds on the discussion presented in Chapter 5 and presents an analysis of the case study inquiry into the themes established in the previous chapter. The data analysis presents excerpts from the interview conducted and, keeping with the Critical Realist stance of the study clarified in Chapter 3, presents causal maps of the various themes inquired into. The chapter is broken down into three key sections based on the types of projects comprising the case study, with each section presenting an answer to the four research sub-questions asked. The chapter concludes by consolidating the finding and answers the primary research question asked by the study.

Chapter 7 concludes the study by presenting a discussion on the findings presented in Chapters 5 and 6 from a Habermasian perspective and draws conclusions from the study. Presentation of the Habermasian discussion is followed by a general discussion that brings closure to the study and clarifies the contribution made by the study in addressing the literature gap. The chapter concludes with a discussion on the future implications of the research project and a personal reflection on the research process.

Chapter 2

Review of Literature

2.1 Introduction

Building on the introduction presented in Chapter 1 this chapter presents a detailed treatise on conflict & negotiation and complexity from the perspective of project management. Associated topics from other relevant knowledge areas are also described in some detail to provide the background necessary to set the context for this work.

I begin the chapter by first presenting an overview of how the literature constituting this chapter was captured and reviewed (see Section 2.2). Next attention is diverted to a discussion of conflict & negotiation in general (see Section 2.3). This is followed by Sections 2.4 and 2.5 which set the definitional constructs of project and provide a brief overview of the history of project management respectively. These sections are included to establish a sound understanding of what is a project and how the conflicts and negotiations experienced during projects are different than those experienced in other activities. Additionally, as this thesis relates to projects it is necessary to explain some of the key movements within project management specifically within the area of project conflict & negotiation and complexity – these are covered in Section 2.5. Once the reader is sufficiently oriented, the discussion moves on to conflict & negotiation in projects (see Section 2.6), which moves away from the general discussion on conflicts presented in Section 2.3 to a more specific discussion on the developments constituting the conflict & negotiation literature in projects. The objective here is to identify the status quo of the area of interest of this study and to unravel the research gap that this study aims to address. Finally,

the discussion then moves to an exploration of the concept of complexity in general (see Section 2.7), where a very brief overview of the concept is presented and the groundwork established for a more directed discussion in the context of project complexity (see Section 2.8). The concluding section brings together the discussion presented in the chapter and sets the stage for a discussion of the research questions and associated methodological considerations; these are discussed in more detail in Chapter 3.

2.2 Methodology

The review of literature presented in this chapter was gathered using a systematic review process. This section details how the literature was found, selected for inclusion in the study, and how rigor was used during the process to ensure that appropriate readings were not missed.

The first step in conducting our review of literature was to narrow down a list of keywords for the study. Initially a list of those keywords was assembled that related directly to the topic of this study. Example keywords were: conflict, negotiation, mediation, arbitration, dispute etc. In the second step I searched through a database of journals at the university library for a listing of possible journals that may feature articles relevant to our keywords. A list of journals was compiled, with the intent that all the issues of these journals will be skimmed through to find articles relevant to this study. An example list of journals resulting from our initial keywords included: Negotiation and conflict management research, conflict resolution quarterly, group decision and negotiation, and journal of conflict resolution.

Papers downloaded from these journals were categorized into two bins, one containing papers dealing specifically with projects and the other containing papers on conflict & negotiation in general. The titles, abstracts, keywords, and conclusions of the papers were read through and only those papers that related to organizational conflict were retained. Whereas, papers related to war and national conflicts were discarded. The remaining articles were read in entirety and research notes pertaining to each were made. Additionally, data about the articles was fed into the EndNote bibliography software. As a final step, the reference list of each of these articles was studied and other interesting articles and journals were identified. Additionally, our keyword list was expanded to include other pertinent terms (such as, arbitration,

hegemony, partnering, EI, Trust, Power etc.). This backward-chaining process was applied repetitively to all the articles I read and continued until no new references were found.

Along with examining the backward-chains of each article I also examined their forward-chains. This included looking up the articles citing a given article and doing this while moving forward in time, to around the present day mark. Many times I found that the forward-chains stopped quite early, this is because many articles were not being cited at all. A process similar to that outlined in the paragraph above was followed during the forward-chaining process as well.

Once my search through learned journals concluded I applied the same process to practitioner journals as well. Example journals included: Project management journal, international journal of project management, engineering construction and architecture management, construction management and economics, IEEE transactions on engineering management etc. This was followed by an examination of papers appearing in popular project management conferences, as well as general management conferences. Examples of conference proceedings examined include: IRNOP, PMI Conference, making projects critical etc.

In addition to the above direct searches through databases were also made to ensure that nothing was missed. Example databases searched included: EBSCO, SCOPUS, JSTOR, Thompson, Springer, Emerald etc. As I did not have direct access to the PMI's Project Management Journal through the university, my supervisor was kind enough to allow access to his personal library. Articles that were not accessible because of different reasons were accessed by corresponding directly to their authors.

2.3 On Conflict and Negotiation

This thesis aims to explore the role played by conflict & negotiation in projects' complexity, I therefore begin my review of literature with conflict & negotiation in general and then converge towards a discussion on conflict & negotiation in projects.

The purpose of the discussion contained in this section is to foster an understanding of the fundamental constructs underlying the conflict & negotiation literature and to explore the latest thoughts constituting this knowledge area. This is followed by a discussion on the literature constituting the conflict & negotiation literature in

project management, with the objective of examining what work has already been done and where the potential for further research in this area lies.

This section is broken down such that: first, conflict is defined and its types are identified. Second, conflicts and disputes are differentiated. Third, major developments within conflict and negotiation in general are discussed. Finally, the discussion concludes with a review of conflict management literature in project management.

2.3.1 Defining Conflict and its Value

Conflict has been defined variously. A collection of definitions found in the literature is presented in Table 2.1. In addition to providing a glimpse of the various definitions of conflict the table highlights the theme behind each definition and categorizes the definitions based on their underlying understanding of conflict. Most definitions provided in the table associate a negative feel with conflict, those agreeing with such a view would likely argue for its eradication.

Conflicts pervade all types of organizations (Henkin and Holliman, 2009, Robbins, 1974, Zey-Ferrell, 1981). The existence of conflict has been associated with organizational commitment and intent to stay (Cox, 1998, Cox, Jones, and Collinson, 2006). Initial formulations propose a categorization of conflict as being either functional or dysfunctional (Pondy, 1967b), implying that certain types of conflicts may actually be good i.e. have a positive effect on organizational commitment (Coser, 1956, Deutsch, 1973, Katz and Kahn, 1966, Singleton and Henkin, 1989). A similar view on conflicts is proposed by Millar, Rogers, and Bavelas (1984), who propose a two model approach to examining conflict: normative and dynamic. The normative view regards conflicts as problematic and requires elimination, whereas the dynamic view regards conflict as natural and beneficial for the changing dynamics of a relationship. The perception of conflict (whether negative or positive) is a consequence of the culture in which it takes place. For example, Chua and Gudykunst (1987) have differentiated between the conflict perception of high-context cultures and low-context cultures. Where the former follow a normative view of conflict and the latter a dynamic view.

Later work by Jehn (1994, 1995) reformulated conflicts as ‘task conflicts’ and ‘relationship conflicts’, the former refers to cognitive disagreements arising from differences in perspective, ideas and opinions (Jehn and Mannix, 2001, Chen, 2006),

Table 2.1: Conflict definitions and their primary focus, adapted from Reed (2006)

Conflict Definition	Source	Definition's Theme	Perceives conflict as
An antagonistic struggle	(Coser, 1956)	Hostile opposition	Negative
A breakdown in standard mechanisms of decision-making	(March and Simon, 1958)	Lack of consensus	Negative
A struggle over values and claims to scarce status, power and resources	(Boulding, 1962)	Scarcity	Negative
A breach in normally expected behavior	(Beals and Siegel, 1966)	Poor Behavior	Negative
A threat to cooperation	(Marek, 1966)	Lack of Cooperation	Negative
Opposing processes in any of several forms - competition, status, rivalry, bargaining, sabotage, verbal abuse etc.	(Walton, 1966)	Opposition (may not necessarily be hostile)	Negative
A struggle over values and claims to scarce status, power and resources in which the aims of the opponents are to neutralize, injure, or eliminate the rivals	(Coser, 1967)	Clash of values and claims	Negative
Any social situation or process in which two or more social entities are linked by at least one form of antagonistic interaction	(Fink, 1968)	Hostile opposition	Negative
As existing whenever incompatible activities occur an action which, prevents, obstructs, interfaces with, injures, or in some way makes it less likely or less effective	(Deutsch, 1973)	Interference	Negative
Arising when a difference between two (or more) people necessitates change in at least one person in order for their engagement to continue and develop - the differences cannot coexist without some adjustment	(Jordan, 1990)	Difference	Negative
A situation in which interdependent people express (manifest or latent) differences in satisfying their individual needs and interests, and they experience interference from each other in accomplishing these goals	(Donohue and Colt, 1992)	Interference	Negative
As a process that begins when one party or individual perceives that one or more others have frustrated or are about to frustrate a major concern of theirs	(Thomas, 1992)	Hindrance	Negative
An expressed struggle between at least two interdependent parties who perceive incompatible goals, scarce resources, and interference from others in achieving their goals	(Hocker and Wilmot, 1995)	Goal incompatibility, resources, and hindrance	Negative
A way of confronting reality and creating new solutions	(Socklingam and Doswell, 1999)	Problem solving	Positive
The perceived incompatibility between values/goals	(Deutsch and Coleman, 2000, Reichers, 1986)	Clash of values and goals	Negative

while the latter is defined as an ‘affective disagreement’ arising from personal dislikes and disaffection and tends to include annoyance, and animosity among individuals (Amason and Sapienza, 1997).

Task conflicts (defined in the paragraph above) are considered positive. Arguably because they are positively related to the quality of ideas and innovation (West and Anderson, 1996), increase constructive debate (Jehn et al., 1999), lead to affective group decision making (Amason, 1996), prevent group think (Turner and Pratkanis, 1994), and are therefore encouraged (Amason, 1996, Amason and Sapienza, 1997, Jehn, 1994, 1995). Whereas, relational conflicts (see paragraph above) or value-goal type conflicts (Leung et al., 2005) are considered negative because of the consequences they generate. For example, relational conflicts are thought to affect ‘group climate’ i.e. the sense of camaraderie within a group, and reducing team effectiveness (Jehn, 1997). Therefore, such conflicts are discouraged (De Dreu and Van de Vliert, 1997, Jehn and Mannix, 2001, Simons and Peterson, 2000). However, according to Medina et al. (2002) these conclusions stem from research that individually examines how one type of conflict affects team performance at a given time (e.g. Amason, 1996, Jehn, 1994, 1995) and ignores the tandem affect of both, which according to Amason and Mooney (1999) is a matter of concern. More recent work, such as De Dreu and Weingard (2003) and De Dreu (2006), have attempted to address the nature of the relationship between task and relationship conflict (the nature of this relationship is discussed in the next paragraph).

Although task and relationships conflicts are different in nature (the former refers to cognitive disagreements arising from differences in perspective, ideas and opinions, while the latter is defined as an ‘affective disagreement’ arising from personal dislikes and disaffection), they are not mutually exclusive. For example, Jehn (1997) explains that task conflicts may transform into relationship conflicts. One possible explanation is that task related criticism may be misconstrued as a personal insult (Amason, 1996) evoking prevaricated responses from the parties involved. However, it is observed that this only happens when there is excessive task conflict (Jehn, 1997). Conversely, a relationship conflict may affect task performance however, research has not yet been able to establish a conclusive relationship (De Dreu and Weingard, 2003 and De Dreu, 2006).

The functional and dysfunctional outcomes of conflicts are discussed by Rahim (2001), who argues that if a social system is to benefit from conflict it must strive to

Table 2.2: Positive and Negative Outcomes of Conflict, Adapted from Rahim (2001)

Positive (Functional) Outcomes	Negative (Dysfunctional) Outcomes
Stimulates innovation, creativity, and growth	May cause job stress, burnout, and dissatisfaction
Improves organizational decision making	Reduces communication between individuals and groups
May result in alternative solutions to a problem being found	May result in giving rise to a climate of distrust and suspicion
Conflict may lead to synergistic solutions to common problems	May damage relationships
Individual and group performance may be enhanced	On the job performance may be reduced
Individuals and groups may be forced to search for new approaches	May lead to an increase in resistance to change
Individuals and groups may be required to articulate and clarify their positions	May affect organizational commitment and loyalty.

reduce the negative effects of conflict and enhance its positive effects, see Table 2.2. The consequences of a conflict, whether positive or negative, are determined by the characteristics of the conflict, desired outcomes of the parties involved, and awareness of conflict management strategies (Jameson, 1999). Certainly, there is no singular level of conflict within an organization i.e. the intensity of conflict can vary and is contingent upon whether the conflict managers can harness its productive functions (Coser, 1956, March and Simon, 1958). Excessive conflicts can reduce organizational commitment (Bess and Dee, 2007, Mintzberg and McHugh, 1985) and is an impediment to trust, empowerment, and organizational commitment (Janssen, 2004). Simply suppressing the conflict is not an option as it has been shown to lower trust and is dysfunctional to an organization (Tschannen-Moran and Hoy, 2000).

The underlying belief that task conflicts have some positive aspects has fostered debates aimed at finding the optimal level of conflict. High levels of task conflict are thought to reduce team satisfaction and commitment (Amason and Sapienza, 1997), causes stress, opposition, and discontent between group members, and creates an indisposition to working together in the future (Jehn, 1995). While low levels of task conflict results in group think and complacent decision making (ibid). A moderate amount of task conflict is therefore considered ideal (Brown, 1983) as it promotes innovation and a higher level of intra-group trust (De Dreu, 2006, Lovelace et al., 2001). An alternative perspective emerged in De Dreu and Weingart's (2003) paper, which in reporting the results of a content analysis study of articles in 30

academic journals found both task and relationship conflicts to be disruptive. In a later article, De Dreu (2008) takes the position that traditional views regarding the benefits of workplace conflict are unsound and methodologically flawed, and that conditions where such conflicts are actually positive and beneficial are few, therefore suggesting that conflict should be managed cooperatively by the parties involved, not for its positive benefits but to reduce any damage it may cause.

The ongoing debate between the scholars of conflict pertaining to whether conflict ought to be considered beneficial or detrimental to the outcome of a given situation can be viewed as a continuum. On the one end of which are researchers harboring the belief that task conflict contributes positively to idea generation and innovation and should therefore be welcomed and stimulated in the workplace (e.g., Pondy, 1967b, Van de Vliert and De Dreu, 1994, George and Jones, 2005, Chen, 2006). On the other are those that offer an utter rejection of conflict having any positive aspects what-so-ever (De Dreu, 2008), a position which had already been criticized by Follett (1925) who considered conflict a normal process whereby socially valuable differences registered themselves for the enrichment of all concerned. In the middle of the continuum are those who see benefit in both types of conflict however, they refer to the more positive consequences of task conflict (e.g., Amason, 1996, Jehn, 1994, Jehn, 1995). Caution is necessary however, as too much task conflict or unmanaged task conflict may lead to an increase in relationship conflict and decrease in participant satisfaction (cf. Medina et al., 2005, Leung et al., 2005).

Conflict can be managed or resolved but not eradicated, for managing people's perceptions, preconceived ideas, and learned behavior in the face of conflict is not a simple task. Any attempts to eradicate conflict would be denounced by Popper as 'utopian engineering' (Popper, 1966). One possible solution is proposed by Burton (1998), who asserts that if conflicts are accepted as stemming from social problems then their resolution and prevention (management) is a reality, made possible by removing the conflict source and thereby adjusting institutional and social norms to the needs of individuals. The concepts of conflict resolution and conflict management are considered as means to achieving the optimum levels of conflict within an organizational setting. Viewed individually, conflict management is the prevention of new conflicts from arising and conflict resolution is the process of reducing a conflict that has escalated.

Robins (1974) summarizes the various perspectives on conflict in the form of three philosophies of conflict. The first philosophy, of the classicist or traditionalists, is based on the assumption that conflict is detrimental to an organization and must be reduced or eliminated. The second philosophy, of the behaviorists, views conflict as inevitable and at times advocate the enhancement of conflict however, they do not actively create conditions that generate conflict. The final philosophy, of the interactionists, differs from the former two and is characterized by an absolute necessity of conflicts, explicit encouragement of opposition, defines conflict management to include stimulation as well as resolution methods, and considers the management of conflict as a major responsibility of all administrators.

The aim of the parties in conflict may extend from simply attempting to gain acceptance of a preference, or securing a resource advantage, to the extremes of injuring or eliminating opponents' (Bisno, 1988). The definition of conflict adopted by this study, as it agrees well with the discussions on social perspectives within projects (e.g. Pryke and Smyth, 2006), accepts a conflict as 'a process of social interaction involving a struggle over claims to resources, power and status, beliefs, and other preference and desires.

Organizational conflicts may be classified as occurring either intra-organizationally (i.e. within the organization) or inter-organizationally (i.e. between two or more organizations). Intra-organizational conflict may be classified on the basis of the level at which it occurs. Thus, intra-organizational conflict comprises intra-personal (or intra-individual or intra-psychic) conflict, interpersonal (or dyadic) conflict, intra-group (or intradepartmental) conflict, and intergroup (or interdepartmental) conflict (Rahim, 2001). This classification is important as it directly affects the conflict handling mechanisms, discussed in Section 2.3.4.

2.3.2 Differentiating Between a Conflict, Dispute, & Disagreement

The conflict body of literature provides evidence of an entanglement between the concepts of 'conflict', 'dispute', and 'disagreement'. The discussion contained in this section seeks to differentiate between the three.

Burton (1993) adopting a temporal perspective in differentiating between a conflict and a dispute, proposes that conflicts are long-term whereas disputes are short-

term. Burton (*ibid*) goes on to argue that conflicts are unavoidable (also see, Kolb, 1992, Lax and Sebenius, 1986) yet manageable, while disputes are avoidable, occurring only when conflicts are not managed, and resolved. Fenn (2006)’s definition of a conflict takes a similar stance and envisages disputes as existing within larger, long-term conflicts.

A disagreement on the other hand is considered to be a bargaining impasse, which in Schelling’s (1960) view is a struggle between bargainers to commit themselves to favorable bargaining positions. Thus, disagreements or bargaining impasses are resolved through a process of negotiation. Similarly, Carnevale and Pruitt (1992) and Jacobs (2002) identify the resolution of disagreements as an occurrence of mediation. Such agreements could be explicit (where both parties actively participate in reaching a decision) or ‘tacit’ (where both parties move towards a decision without discussion) (Jacobs, 2002). The existence of disagreements is a positive phenomenon as it generates reasoning and alternatives (Price et al., 2002). Interestingly, disagreements vanish as soon as full disclosure is made by both parties (Sosa, 2012, Habermas, 1984) because there is no longer any hidden agenda or imperfect information left.

In further clarifying the difference between conflicts and disputes, Burton (1997, 1990) considers a conflict as a serious challenge to existing norms, relationships, and rules of decision making, and a dispute as the control of discontent stemming from the implementation of specific policies. Later, Burton (1998) categorizes disputes as occurring over material and physical resources, whereas conflicts occur over human needs and aspirations. While Fenn et al. (1997) considers a conflict as an incompatibility of interest and a dispute as associated with distinct justiciable issues (such as injury or claims for equitable relief). Hence, both disputes and conflicts are ‘affective’ i.e. relational in nature but have different causes. It is important to note that conflicts have both positive and negative aspects (see Section 2.3.1), while disputes are solely afflictive (*ibid*).

Interestingly, disputes are classified into two categories ‘litigated’ (i.e. where a court verdict is reached) and ‘settled’ i.e. those that settle prior to trial or prior to verdict pronouncement during a trial (Priest and Klein, 1984). Although, litigation is not the only mechanism for dispute resolution, it is not favored because a trial is considered to be a failure (Gross and Syverud, 1992) of reaching a decision socially. Further more, litigations involving trial by jury, also referred to as a ‘legal lottery’ for

their inconsistent outcomes (Clermont and Eisenberg, 1992), are favored even less than those involving trial by judge (Clermont and Eisenberg, 1992). Additionally, within the legal circles, there are arguments that too many disputes are settled out-of-court (Grillo, 1991) (either pre-trial or pre-verdict) and mediated or arbitrated (Delgado, 1985). Whereas, the focus in case of litigation should be on adjudication (Resnik, 1982) and not settlement. Disputes emerge and are transformed through a process in which ‘unperceived injurious experiences are, or are not, perceived (naming), do or do not become grievances (blaming), and ultimately emerge as disputes (claiming)’ (Felstiner et al. 1980). Work by Harrison (2003) identifies seven different categorizations of disputants: Information seekers, exception seekers, victims, enforcers, protectors, targets, and destroyers. These differences point at the motivations of the disputants and may explain why each dispute is unique and is resolved differently.

Conflict too has been envisioned as forming a continuum, ranging from conflict avoidance to violence (Moore, 1989). Alternatively, Fenn et al. (1997) propose a continuum ranging from conflicts to disputes, where the former requires conflict management and the latter dispute resolution (Fenn, 2006) i.e. arbitration or litigation. Conflict management usually makes use of non-binding techniques while dispute resolution make use of a combination of binding and non-binding methods (Fenn, 2006).

Envisioning conflict, settlement, and lack of conflict or peace as disjointed events is certainly valid in many contexts and can aid in our understanding. For example, knowing what state a party is in could signal their intent or commitment and could also serve as a deterrent to the other party (Schelling, 1960, Kahn, 1961, and McGuire, 1967). However, in reality contending parties are simultaneously ‘in conflict’ or ‘at peace’ i.e. the intensity of the conflict varies along a spectrum. Conditions of absolute conflict or absolute peace do not exist (Clausewitz, 1984). Hirshleifer (1987) explains these as moments of productive and ‘appropriative activities’, where the former is concerned with doing productive work and the latter focused on seizing resources controlled by others or defending against invasions. Interestingly, appropriative activities may also include profiteering through robbery, confiscation, redistribution, or coercive encroachment.

To avoid any confusion between a conflict and a dispute, Fenn’s (2006) differentiation is accepted and conflicts are considered to be longer lasting, having both

positive and negative aspects, whereas disputes are short-term, afflictive, and arising within conflictual conditions. Etiologically, therefore conflict management is accepted as a means of preventing the occurrence of disputes (i.e. a preventive measure), while dispute resolution is considered as a corrective measure. In agreeing with Burton (1989) I accept conflicts to be related to issues of human needs and aspirations, while disputes are related to material and physical resources. Conflicts are managed throughout the period where two parties are engaged, while disputes require resolution through external input in the form of mediation, arbitration, judge, or jury. Several disputes could arise during a conflict, while the intensity of conflict during the period of engagement between parties varies.

Different triggers of disputes have been identified in the literature, these are presented in Table 2.3.

Table 2.3: Dispute triggers, adapted from Fenn (1997)

Triggers of disputes	Focus	Identified by
Unrealistic expectations, contract documents, communications, lack of team spirit, and changes	Construction general	Bristow & Vasilopoulous (1995)
Payments, performance, delay, negligence, quality, and administration	Construction procure- ment and contracts	Conlin et al. (1996)
People, process, and product	Construction contracts	Diekmann et al. (1994)
Contract terms, payment, variations, time, nomination, re-nomination, and information	Construction general	Heath et al. (1994)
Root causes and proximate causes	Construction general	Kumaraswamy (1997)
Management, culture, communications, design, economics, tendering pressures, law, unrealistic expectations, contracts, and workmanship	Construction law	Rhys Jones (1994)
Acceleration, access, weather, and changes	Construction claims	Semple et al.(1994)
Misunderstanding and unpredictability	Construction claims	Sykes (1996)

2.3.3 Conflict Triggers and Classification

Conflicts may be viewed as emanating from either of four states (Pondy, 1964), these are (1) antecedent conditions (such as scarcity of resources, policy differences etc.), (2) affective states (such as stress, tension, hostility, anxiety etc.), (3) cognitive states of individuals (such as perceptions of awareness), and (4) ‘conflictful behavior’ (such as passive resistance, or overt opposition etc.). Further reflection on the sources of conflict requires paying attention to the multiple sources of causality. The term ‘cause’ is a polyseme taking four fundamental types: Material cause, formal cause, efficiency cause, and final cause (Aristotle et al., 1999). These are expanded upon further in popular books of logic, which identify several types of possible causes: Necessary cause, sufficient cause, indicator cause, salient cause, triggering cause, structural cause, proximate cause, and remote cause. These causes or aitions may be helpful in making sense of the underlying reasons behind a conflict or negotiation effort.

From a teleological perspective conflict may be viewed as either naturalist or Aristotelian, that is, either conflicting situations give rise to conflict, or because there is conflict there are conflicting situations, respectively. Regardless of which teleology is accepted, when parties engaged in conflict work toward a conclusion they might be extrinsic or intrinsically driven. Those working towards an extrinsic finality may be considered as having pro-social motivations and those following an intrinsic finality as having selfish motivation (Carnevale and Pruitt, 1992).

In their work on policies Moffett & Sloman (1994) foresee conflict occurring only when there is some sort of an overlap between the objects of discourse, the authors go on to identify four type of overlaps, namely: Double overlap, subject overlap, target overlap, and subject-target overlap. Others have examined the cognitive consequences of conflict and identified conflict occurring: Between stimulus dimensions (termed ‘Stroop conflict’, see MacLeod 1991), location and direction of response (termed ‘Simon effect’, identified by Simon & Berbaum 1990), and in responding to a single stimulus while surrounded by flankers (Eriksen and Eriksen 1974). Other possible motivations of engaging in a conflict could be egoism (or self-interest), altruism (selfless concern e.g. for the environment), anomicism (a mismatch of individual actions to societal rule), and fatalism (resignation of consequence due to a sense of powerlessness) (cf. Durkheim, 1951).

Elsewhere conflict is seen as stemming from contracts used within the organization, where the disjoint between a structured document (the contract) and an unstructured reality is the cause of conflict (Clegg, 1992). Where as according to Morrill (1995) causes of conflict are: Promotion and compensation, management style, personal life, personalities, and individual performance. Other drivers of conflict, as identified in Section 2.3.1, include conflicts originating from a clash of interest, structure, value, data, and personality. The aforementioned conflict drivers are summarized in Table 2.4.

Table 2.4: Conflict Drivers

Drivers	Identified by
Overlap between objects of discourse. Four overlaps are identified: Double overlap, subject overlap, target overlap, and subject-target overlap	Moffett & Sloman (1994)
Stimulus dimensions (Stroop conflict)	MacLeod (1991)
Location and direction of response (Simon effect)	Simon & Berbaum (1990)
Single stimulus vs. flankers	Ericksen & Ericksen (1974)
Egoism, altruism, anomicism, and fatalism	Durkheim (1951)
Disjoint between contracts and an unstructured reality	Clegg (1992)
Promotion and compensation, management style, personal life, personalities, and individual performance	Morrill (1995)
Clash of interest, structure, value, data, and personality	See discussion in section 2.5.1
Structure and data	Zikmann (1992)
Personality	Hill (1977)
Role	Getzels & Guba (1954); Parsons (1951); Parsons & Shils (1951); and Toby (1951)

Conflict literature suggests that various classifications of conflict are possible, following Rahim (2001) suggestion that conflicts are classifiable by their sources;

an elaborated classification is presented in Table 2.5. Zikmann (1992) identifies structural and data conflicts as additional sources of conflict, where the former arises due to the interdependencies between various departments, while the latter arises from the interpretation of data. Other popular sources of conflict are personality (Hill, 1977) and role (Getzels and Guba, 1954, Parsons, 1951, Parsons and Shils, 1951, Toby, 1951). Role conflict has three necessary elements: Actor, personality, and role; a role conflict is said to occur when an actor is required to fill two or more roles whose expectations are inconsistent and can give rise to procedures, roles, and career conflicts (Getzels and Guba, 1954).

Conflict is processual and having varied triggers, different models have been suggested to capture this process. One such conflict lifecycle suggests that a conflict has an initiating event, an influencing event, and a concluding event (Goldman, 1966). Whereas, Pondy (1967a) presents a five stage model of a conflict episode, these are: Latent conflict, perceived conflict, felt conflict, manifest conflict, and conflict aftermath. Alternatively, Thomas (1976)'s models a conflict episode to include frustration, conceptualization, behavior, and outcome.

It is interesting to note that conflict does not necessarily occur simply because of the presence of incompatibilities, disagreements, or differences within or between entities involved in some sort of social engagement. Rather, for conflict to occur, some threshold level of intensity must be experienced before parties become aware of any conflict (Rahim, 2001). Further more, due to the varied threshold tolerance levels of the individuals involved in these interactions, conflicts may arise at different times during similar situations.

2.3.4 Measuring and Handling Conflict

The various conflict handling techniques presented in the literature could be classified based on the number of factors they take into consideration, four such categories are proposed by Rahim (2001) termed the 2-5 styles. These are discussed in more detail next.

The 2-style model of conflict handling originates from the earlier work of Deutsch (1949) who suggested a simple cooperative-competitive model of social conflict. Unfortunately, due to the overly simplistic view of conflict adopted by this model it does not situate itself well in the resolution of actual conflicts that are more complex

Table 2.5: Conflict Classifications and their Description, adapted from Rahim (2001)

Conflict Types	Other names	Description
Affective conflict	Psychological conflict (Ross and Ross, 1989); Relationship conflict (Jehn, 1997); Emotional conflict (Pelled et al., 1999); Interpersonal conflict (Eisenhardt et al., 1997); & Individual conflict (Sacklingam and Doswell, 1999)	A condition in which group members have interpersonal clashes characterized by anger, frustration, and other negative feelings (Pelled et al., 1999)
Substantive conflict	Task conflict (Eisenhardt et al., 1997, Jehn, 1997, Pelled et al., 1999); Cognitive conflict (Cosier and Rose, 1977, Amason, 1996, Holzworth, 1983); Issue conflict (Hammer and Organ, 1980); & Organizational / viewpoint conflict (Sacklingam and Doswell, 1999)	Occurs when two or more organizational members disagree on their task or content issues (Guetzkow and Gyr, 1954)
Conflict of interest		Occurs when each party, sharing the same understanding of the situation, prefers a different and somewhat incompatible solution to a problem involving either a distribution of scarce resources between them or a decision to share the work of solving it (Druckman and Zechmeister, 1973)
Conflict of value	Ideological conflict (Druckman et al., 1988)	Occurs when two social entities differ in their values or ideologies on certain issues (Druckman et al., 1988)
Goal conflict		Occurs when a preferred outcome or an end-state of two social entities is inconsistent (Rahim, 2001) and in rare cases may involve divergent preferences over all of the decision outcome, constituting a zero-sum game (Cosier and Rose, 1977)
Realistic / Nonrealistic conflict	Intrinsic / extrinsic conflict (Haiman, 1951)	Realistic conflict refers to incompatibilities that have rational context (i.e. tasks, goals, values, and means and ends). Where as nonrealistic conflict occurs as a result of a party's needs for releasing tension and expressing hostility, ignorance, or error (Rahim, 2001). Realistic conflict is associated with 'mostly rational or goal-oriented' disagreements, nonrealistic conflict 'is an end in itself having little to do with group or organizational goals' (Ross and Ross, 1989)
Institutionalized / noninstitutionalized conflict		Institutionalized conflict is characterized by situations where actors follow explicit rules, and display predictable behavior, and their relationship has continuity. Where racial conflict is noninstitutionalized and these three conditions are nonexistent (Rahim, 2001)
Retributive conflict		Is characterized by a situation where the conflicting entities feel the need for a drawn-out conflict to punish the opponent (Rahim, 2001)
Misattributed conflict		Relates to the incorrect assignment of causes (behaviors, parties, or issues) to conflict (Deutsch, 1977)
Displaced conflict		Occurs when the conflicting parties either direct their frustrations or hostilities to social entities who are not involved in conflict or argue over secondary, not major, issues (Deutsch, 1977)

and seldom follow a purely cooperative or competitive stance. Evidence of this is available in Game Theory literature, which acknowledges the existence of ‘nonzero-sum games’ and ‘mixed-motive’ conflicts (Rahim, 2001). Similarly, another two style model proposes the use of ‘engagement’ and ‘avoidance’ (Knudson et al., 1980) however, it has not received any prominence in conflict theory and research.

There are several 3-style models: Putnam and Wilson (1982) identify three style of handling conflict: Non-confronting (obliging), solution-orientation (integrating), and control (dominating); Hocker and Wilmot (1991) argue that ‘conflict styles cluster similarly to conflict tactics’, into three types: Avoidance, competitive (distributive), and collaborative (integrative). Further work by Lawrence and Lorsch (1967a) in measuring five modes of conflict resolution found that only three are used i.e. forcing, smoothing, and confrontation. Additionally, studies of marital conflict identify their own 3-style models e.g. Billingham and Sack’s (1987) model includes: Reasoning, verbal aggression, and violence. Whereas, Rands et al.’s (1981) model includes attack, avoid, and compromise.

Pruitt (1983) identifies four styles of handling conflict: Yielding, problem-solving, inaction, and contending. Later work by Pruitt and Carnevale (1993) suggests that the problem-solving style is the most effective conflict management style. Another 4-style model is suggested by Kurdek (1994), which includes problem-solving, conflict engagement, withdrawal, and compliance. The 5-style models of conflict handling are based on the work of Follett (1925), who conceptualized three main conflict handling techniques – dominating, compromise, and integration – and other, secondary techniques: Avoidance and suppression. Later work by Blake and Mouton (1964) presents a classification scheme of the modes (styles) of handling conflict into five types, based on the attitudes of the manager’s concern for production and people, these are: Forcing, withdrawing, smoothing, compromising, and problem solving. This scheme is later reinterpreted by Thomas (1976) who considers a parties intentions in formulating his classification i.e. cooperativeness (attempting to satisfy the other concerns) and assertiveness (attempting to satisfy one’s own concerns). Follow up work by Rahim (1983a) and Rahim and Bonoma (1979) differentiates the conflict handling styles on the basis of two fundamental dimensions: Concern for self and concern for others, in essence portraying the motivational orientation of an individual engaged in conflict; their five styles of conflict handling are integrating, obliging, dominating, avoiding, and compromising.

Amongst the models discussed, Blake and Mouton (1964)'s managerial grid was regarded as the leading thesis on handling conflict (Pruitt and Rubin, 1986, Rahim, 1986, Kabanoff, 1987, Shockley-Zalabak, 1988, Van de Vliert and Prein, 1989) for a longtime and formed the underlying criteria on which various conflict measurement instruments are based (Rahim, 2010), these are listed in Table 2.6. Elements of Blake and Mouton's (1964) are still found in research today, see for example Kim et al. (2007). MODE has been criticized for its poor discrimination between the theoretically and practically important styles of competing and collaborating, an area where the ROCI performs much better (Van de Vliert and Kabanoff, 1990). On the otherhand, KCSI professes to be more culturally sensitive and easier to implement than MODE however, our literature survey did not reveal any research papers corroborating this claim. A detailed description of these instruments is not provided as it is beyond the scope of this study.

Table 2.6: Conflict Style Instruments

Instrument	Developed by
Conflict Management Survey	(Hall, 1969)
Management of Difference Exercise (MODE) Survey	(Thomas & Kilmann, 1974)
Organizational Communication Conflict Instrument	(Putnam & Wilson, 1982)
Conflict Management Message Style Instrument	(Ross & DeWine, 1982)
Rahim Organizational Conflict Inventory (ROCI)	(Rahim, 1983)
Kraybill Conflict Style Inventory (KCSI)	(Kraybill, 2011)

2.4 Projects: Defining Constructs

As this study is going to examine conflict & negotiation particularly within projects, therefore it is imperative to define what a project is, how it is managed, and what role expectations are there from its project manager. The discussion provided below lays the foundation upon which a discussion of project conflict & negotiation will be based.

This section is followed by a brief history of project management, see Section 2.5.

2.4.1 Defining a Project

A ‘project’ has been defined variously in the literature. However, a dominant method within the literature is what Cicmil et al. (2006) have called the ‘instrumental rationality’ approach, which conceptualizes projects as goal oriented systems of activities and structures that exist out there in a pre-given form ready to be managed or studied – many of the better-known definitions of a project are associated with this ontological view (Winter et al., 2006). Some popular definitions of a project found in contemporary project management texts and methodologies are provided in Table 2.7.

Table 2.7: Defining a Project

A project is a:	Defined by
‘temporary endeavor undertaken to create a unique product or service’	(PMI, 2008)
‘discrete undertaking with defined objectives often including time, cost, and quality (performance) goals’	(APM, 2006)
‘unique set of coordinated activities, with definite starting and finishing points, undertaken by an individual or organization to meet specific objectives with defined schedule, cost and performance parameters’	(BSI, 2002)
‘value creation undertaking based on a specific [project], which is completed in a given or agreed timeframe and under constraints, including resources and external circumstances’	(PMAJ, 2009)

There are certainly many more definitions of projects, however all are unified in the belief that projects are: Temporary, unique, objective driven, mechanisms for change, involving risk and uncertainty, and require a commitment of material and financial resources (Smith, 2002). Offering a reductionist view, Morris (1994) contends that perhaps the one thing common to most definitions of projects is that it is a time limited activity and that its management is the same as any other kind of management, except that one moves through a predetermined lifecycle – the project lifecycle itself has come under criticism for being a poor representation of how projects actually evolve (Gersick, 1988, Gersick, 1989).

On the other hand, Maylor (2001) is critical of any conceptualizations of projects as ‘one-off activities’ arguing that such framings infer a misplaced degree of novelty within projects and forces us to focus on the technical or physical aspects of projects while ignoring their role as a business process. He (ibid) defines a project as a

‘finite activity, which is a point of convergence for business functions, theoretical disciplines, and all parts of the value stream’. Although this proposed redefinition of a project retains elements of uniqueness and finitude it does convey a closer relationship between projects and the broader organization, which perhaps is not as dominant in other definitions but is certainly not a new concept.

Alternatively, another stream of thought has emerged in more recent literature, which views a ‘real’ project as more complex, unpredictable and multidimensional, compared to those portrayed in rational or deterministic models (Winter et al., 2006), such as those discussed above. As an example, Linehan and Kavanagh (2004) argue that the frequent impossibility of defining unambiguous goals is problematic because ‘projects are complex, ambiguous, confusing phenomena wherein the idea of a single, clear goal is at odds with the reality’. Contrary to the traditional definitions discussed above, some have taken a Foucaultian view of projects, proposing that ‘projects do not exist as given, readymade and neutral, but are constituted by the actions of interdependent actors through the process of power and conversational relating in the medium of symbols which act as representations of shared meaning and direction for action’ (Cicmil et al., 2006, Hodgson and Cicmil, 2007).

Over time many multidimensional conceptions of projects were proposed, emphasizing their social nature, history, context, individual team member values, and wider structural frameworks (Cicmil et al., 2006, Winter et al., 2006). A collection of the various ways in which projects have been conceived over time is presented in Table 2.8.

From the discussion thus far it is apparent that it is difficult to pinpoint a precise definition of a project, as new perspectives on projects emerge and new ways of thinking are introduced into the discipline the list of terms and concepts used to define a project will most likely continue to grow. However, in order to extend our discussion further it is necessary to select a definition of a project upon which further discussion can be based. Accepting a project definition adhering closely to the views purveyed by the standard making bodies is convenient but it delineates a boundary that is overly simplified and restrictive. The working definition accepted by this study is an adaptation of the definitions provided above by Winter et al. (2006), Cicmil et al. (2006), and Hodgson and Cicmil (2007) and consider projects to be: Complex, unpredictable, and multidimensional because they are constituted by the actions of interdependent actors through the process of power and conversational

Table 2.8: Conceptualizing a Project

Project Conceptions	References
Lonely phenomenon	(Kreiner, 1995)
Cross-functional integration mechanisms, delivering integrated complex solutions	(Ancona and Caldwell, 1990, Ford and Randolph, 1992, Davies and Hobday, 2005)
Contractual agreements between markets and organizations	(Stinchcombe, 1985)
‘Nexus of contracts’	(Jensen, 2000)
Teams working towards a deadline in a time constrained environment	(Gersick, 1988, Gersick, 1989)
‘Temporary systems’ and ‘temporary organizations’	(Kvale, 2007, Lundin and Söderholm, 1995, respectively)
Effective product development organizational tools	(Clark and Wheelwright, 1992, Eisenhardt and Tabrizi, 1995, Lindkvist et al., 1998)
‘Unit of analysis for understanding the production of high cost, complex products and systems’	(Davies and Brady, 2000, Hobday, 1998)
‘Systems of information processing’	(Winch, 2005)
‘Delivery mechanisms for change’	(Cleland, 1999)
‘Production centers’	(Pryke and Smyth, 2006)
Cornerstones for new organizational forms	(Castells, 1996, Whittington et al., 1999)
Drivers of strategy formulation	(Whittington et al., 2006)
Tools for managing uncertainty	(Bourne and Walker, 2005)
‘Memeplex’ synthesizing human sensations and expectations pertaining to the use of limited resources	(Whitty, 2005).

relating in the medium of symbols which act as representations of shared meaning and direction for action.

2.4.2 Role of a Project Manager

The role of a ‘project manager’ was initially defined by Gaddis (1959) as that of managing ‘professional specialists’. Additionally, a project manager’s role has been acknowledged as being difficult and complex (Gaddis, 1959, Pinto and Kharbanda, 1995),

The role of a project manager in project management literature is articulated from two perspectives, i.e. the technician or instrumental and the critical or con-

structivist. From the perspective of the ‘instrumental rationality’ approach, project managers are practitioners who ‘follow detailed procedures and techniques, prescribed by project management methods and tools’ (Winter et al., 2006), elsewhere identified as ‘skillful technicians’ (Cicmil, 2006). However, such definitions have come under some criticism, for example, Alvesson and Deetz (2000) argue that this reluctance to abandon such conventionalist ideals leads to narrow formulations that do not fully reflect organizational reality, which is messy, ambiguous, fragmented and political in character and thereby limiting the role of a project manager to that of an implementer. Hence, the project manager is focused on issues of project control & content and their potential as competent social & political actors in complex arrangements is marginalized (Cicmil and Hodgson, 2006b).

However, our examination of some of the popular project management literature, which may be considered as personifications of the instrumental reality, reveals that although a significant amount of attention is paid to the use of tools and techniques there are simultaneously elements of leadership, team-building, influence, communication, and conflict & negotiation attached to the role. The role of a project manager has been defined variously by the popular BoK’s, see Table 2.9.

An alternative perspective comes from the work of a few members of the ‘re-thinking project management’ network, in whose view project managers are ‘reflective practitioners who can learn, operate and adapt effectively in complex project environments, through experience, intuition and the pragmatic application of theory in practice’ (Cicmil and Hodgson, 2006b). Founding contributors to this perspective have defined the role of a project manager as a ‘cross functional integrator’ (Ford and Randolph, 1992); as a ‘virtuoso social and political actor’ Flyvbjerg (2001), who values reflexivity, judgment, intuition, rationality, and ethics (Cicmil, 2006); and as a ‘bandleader’ (Sayles, 1979), who coordinates the work of a group of technical workers, while engaging in an activity that is considered as the fundamental building block of an organization (Morris, 1994).

From the discussion above it is concluded that the role of a project manager is not a simple one. Rather it is ‘complexified’ by issues stemming from a project’s organizational structure, which been argued as problematic as they leave project manager’s in a precarious position where they are assigned the responsibility to directly manage a project to completion (Clegg and Courpasson, 2004) while being perceived as working in a non-legitimate capacity (Kimmons and Loweree, 1989).

Table 2.9: Defining the Role of a Project Manager: The Instrumental View

Role of a Project Manager	Defined by
One who not only uses project management tools and techniques but also possesses sound knowledge of the project, is able to accomplish project goals, and has leadership abilities in managing both the project personnel and other constrained resources.	(PMI, 2008)
As being assigned responsibility for introducing change and having accountability for its successful accomplishment; as exercising leadership and organizing, controlling, and directing constrained resources; as managing the evolution of the project through its lifecycle; as being responsible for delivering the project in the agreed schedule, to the correct technical specification, and within the approved budget and other specified criteria; and as possessing people skills, such as teamwork, leadership, conflict management, negotiation, and personnel management.	(APM, 2006)
‘A primary stakeholder who is a mission-performing professional endowed with the necessary authority by the organization to direct and integrate the project; his/her role is to develop the given mission into specific objectives and execution strategy as well as forming a project team with expert professionals to execute project work under a set of constraints’. Elsewhere in the document he [<i>sic</i>] is described as: Forming and managing a temporary organization whose activity is limited to the performance of a specific mission by maintaining relations with the parent organization; ‘demonstrate[ing] management ability by exercising specialized authorities and have the responsibility for achieving results’; and as integrating their teams, and managers and having mobility to avert conflicts in the organization and motivating others.	(PMAJ, 2009)

2.4.3 Defining Project Management

Olsen (1971) defines project management as *the application of a collection of tools and techniques...to direct the use of diverse resources toward the accomplishment of a unique, complex, one-time task within time, cost and quality constraints. Each task requires a particular mix of these tools and techniques structured to fit the task environment and lifecycle (from conception to completion) of the task.* This definition was later adopted by the British Standards Institute and is in use in their BS6079-1:2002 standard. More definitions of project management are provided in Table 2.10.

Project management it is proclaimed is essential for financial success in an increasingly uncertain and complex world (Cleland and King, 1967, Kerzner, 1995). Unfortunately, most of the definitions of project management are still generally organized around Henri Fayol’s four functions of management (Kerzner, 2009). This is because roots of the ‘instrumental reality’ and the foundations of the ‘core knowl-

Table 2.10: Defining Project Management

Definition	Defined by
‘Application of knowledge, skills, tools, and techniques to project activities to meet the project requirements’	(PMI, 2008)
‘Planning, organizing, monitoring, and control of all aspects of a project and the motivation of all involved to achieve project objectives safely and within agreed time, cost and performance criteria’	(APM, 2006)
‘Professional capability to deliver, with due diligence, a project product that fulfills a given mission, by organizing a dedicated project team, effectively combining the most appropriate technical and managerial methods and techniques and devising the most efficient and effective work breakdown and implementation routes’	(PMAJ, 2009)

edge’ of project management reside within the domain of systems analysis and management (Williams, 2005), specifically in the works of Cleland and King (1967, 1983). Probably, Morris’ (1994) rumination that project management ‘in many respects is still stuck in the 1960s time warp’ is to a great extent still valid today.

Recently, a push to form new conceptions of projects and their management has emerged, for example (Cicmil et al., 2006, Cicmil and Hodgson, 2006b, Maylor, 2001, Williams, 2005, Winter et al., 2006), which is changing our perspective of what a project is and consequently how it should be managed (cf. Cicmil and Hodgson, 2006a). However, any new definitions from the research community are not forthcoming.

The next section provides a brief history of project management.

2.5 History of Projects

This section presents a brief history of project management with the objective of providing historical context to the issues of conflict & negotiation within projects.

According to Carayannis et al. (2005) the developments within the field of project management may be categorized into four periods: The craft system prior to 1958, application of management science from 1958 to 1979, projects as production centers 1980-1994, and creating new environments 1995-present. Other authors such as Pryke and Smith (2006) have used an entirely different classification and categorized the developments in the field into phases such as: Traditional, functional, information processing, and relational, unfortunately they do not specify precisely when

each phase experienced the most growth. Morris (1994) adopts a simpler method of classifying the major developments within project management by decades and provides a more chronological treatment of the developments taking place within the discipline. Morris (ibid) categorizes the developments as: The craft system lasting until the c.1940s to around the WWII, development of systems management during the 1950s, the decade of management systems 1960s, expansion of project management in the 1970s, the expansion of the strategic perspective of managing projects in the 1980s, and the early 1990s, which Morris (1994) does not identify with a name – however, from the discussion within his book it would be appropriate to name it ‘customer centralism & quality focus’. During the last half of the 1990s researchers began to critically examine the foundations of project management and prompted for more research into project activities from a ‘relational perspective’. Lastly, Laufer et al.’s (1996) characterization of the last four decades leading up to the millennium provides an additional view of the evolution in the field. According to them the 1960s was a decade of scheduling (control), the 1970s of teamwork (integration), 1980s of reducing uncertainties (integration), and the 1990s of simultaneous management (dynamism) – except the 1960s where the dominant project characteristics were simple & certain projects, the remaining decades are characterized by projects that are complex & uncertain. These taxonomies may be aligned as shown in Table 2.5, providing the reader with a sense of the developments within the discipline of project management and to establish the groundwork for the contribution that this study seeks to make to the body of knowledge. Other helpful taxonomies detailing the major movements within project management are provided by Anbari et al., (2008), Söderlund, (2002, 2009b), and Bredillet, (2007) – see appendixA.

Table 2.11: Taxonomies of the Developments in Project Management

Authors	Labels used for different eras of development						
Pryke Smith (2006)	Traditional		Functional	Information Processing			Relational
Carayannis et al. (2005)	Craft System leading up to 1958		Application to management science from 1958 to 1979		Projects as production centers 1980-1994	Creating new environments 1995-2005	
Laufer et al. (1996)			Scheduling (control) 1960s	Team work (integration) 1970s	Reducing uncertainty (flexibility) 1980s	Simultaneous management (dynamism) 1990s	
Morris (1994)	Craft era leading up to the 1940s	WWII era	Systems management 1950s	Management systems 1960s	Proliferation of project management 1970s	Expansion of the strategic perspective of managing projects 1980s	‘Customer centralism quality focus’ 1990s

As the history of project management has been described in sufficient detail in Morris (1994) and Levene (1996), therefore the following sections aim to orient the

reader to the theoretical underpinnings of this study. The sections below pick up from where Morris (1994) and Levene (1996) have left off and are based on a slightly modified version of Morris (1994) and Carayannis et al.'s (2005) classifications.

2.5.1 Dynamism: 1990 - 1999

During this time period some authors focused on the ‘human element’ and team building within projects (Pinto, 1990, Fabi and Pettersen, 1992, Pinto et al., 1993). Concepts such as ‘uncertainty’ and its implications in projects were examined by Seiler (1990), while ‘context’ was a concern taken up by Buchanan (1991). While, authors such as Lovell (1993) initiated a debate on the power struggles faced by project managers, whereas Dalcher (1993) called for an examination of why projects were still failing. Others urged that in order for future developments in project management to take place it needs to abandon the limiting perspective of a mechanistic world and its associated rationalism (Balck, 1994).

A seminal report of the construction industry in the UK was released under the charge of Sir. Michael Latham (1994), entitled ‘constructing the team’ (informally known as the ‘Latham report’), with the purpose of ending what the media called a ‘culture of conflict and inefficiency’ (Tieman, 1994). This report is regarded as the most comprehensive attempt to grapple with the widely accepted problems of the British construction contracting system (Winch, 2000). Resulting from the Latham report a comparative study of the construction industry was conducted in the US by King (1996). Recommendations of the Latham report were put into practice in the UK through the Construction Industry Board (CIB) and later through the Construction Task Force (CTF). The CTF published its first report entitled ‘Rethinking Construction’(Egan, 1998), informally known as the ‘Egan report’, focusing on improving industry performance, rather than institutional reform – both the Latham and Egan reports enthusiastically endorsed ‘partnering’.

The works of Frame (1995), Pinto and Kharbanda (1996), and Kharbanda and Pinto (1996), in identifying the main reasons for project failure, played a significant role in fostering debates on project success & failure factor research and laying the foundation for future project management research using alternative perspectives on projects. These debates could be seen as an extension of earlier work by Murphy et al. (1974), which investigated project success in 650 completed aeronautical projects.

An underlying belief in the project failure and success literature, carried over from the 1960s, is that project management is integral to the success of a firm operating in an uncertain and complex world (Kerzner, 1995). Thus, there is a tendency to blindly accept ‘project management’ as a good thing. Research into project failure therefore, seeks out other issues e.g. Drummond (1999) argues that escalation i.e. price escalation of raw material is a cause of project failure; Pinto and Kharbanda (1996) provide a checklist of all the wrong things a project manager can do to ensure a project failure; Verner et al. (1999) focused on human factors contributing to project success, and Atkinson (1999) in questioning the validity of cost, time, and quality in measuring project success (also see, Morris and Hough, 1987) argues that perhaps it needs to be examined whether a project achieves its end goal rather than looking at how the process fared while trying to achieve that goal.

Authors such as Frame (1995, 1999), and Morris (1994, 1998), issued calls for a reexamination of the dominant doctrines in project management (also see, Maylor, 2001, 2005), prompting new perspectives in project management research. Initial attempts at such a reexamination include for example, the proposal that projects should not be considered lonely phenomenon (devoid of history, context, and future) but rather they should be analyzed in the context of a ‘drifting environment’ (Kreiner, 1995). Where as, Löwendahl (1995) suggests that projects should be analyzed for their linkages with the parent organizations. Around this time the concept of projects as temporary organizations was proposed, quite possibly originating from an earlier concept of projects as temporary systems by Bryman et al. (1987), where the focus of the project is on actions rather than decision making (Lundin and Söderholm, 1995). Lundin and Söderholm’s (1995) was later revalidated by Arvidsson (2009). Packendorff (1995) called for the use of a diverse set of perspectives in these temporary organizations, emphasizing a need for normative theories, empirically grounded research that is descriptive in nature, and taxonomic classifications of projects. While others focused on the prevalence of project management in organizations, eventually leading to the idea of the ‘projectization of society’ (Lundin and Söderholm, 1998) and upon the relationships between projects and their parent organizations (Blomquist and Packendorff, 1998) – an idea that stems from the initial work on the matrix form of organization (Mee, 1964), which is in line with Castells’ (1996) concept of a ‘network society’.

In the latter half of the 1990s a collection of alternate perspectives on project management appeared. Unfortunately, these are too varied to encapsulate under a single heading. Authors contributing alternative perspectives on projects during this period include: Eden et al.'s (1998) examination of the concept of a learning curve and the role of disruption in project delays, an amended version of which was later published by Eden et al. in (1999), Gulati and Singh (1998) focusing on strategic alliancing examined the cost of coordinating strategic initiatives, which agrees with Whittington et al.'s (2006) conceptualization of projects as strategic formulations, Hobday's (1998) work in the domain of project complexity suggested the use of alternative perspectives in the analysis and understanding of producing high cost, complex products, and systems. Similarly, Williams (1999) examined the fundamental constructs of project complexity and concluded that the traditional project management techniques are not adequate for complex projects (discussed in more detail in the section on project complexity), Lindkvist et al. (1998) proposed that project management is an effective product development organizational tool, Hughes (1998) examined the intertwined relationships within projects in the context of the military-industry-university complex focusing on the issues of *inter alia* power and bureaucracy within projects; Lundin and Söderholm (1998) extended their previous idea of a project as a 'temporary organization' to that of a 'projectification of society', Rodrigues and Williams (1998) used a systems perspective and examined the effects of requirements variability on project performance, Artto et al. (1999) presented the concept of 'managing business by projects' which would later reappear as the concept of 'management by projects' (see, Project Management Institute, 2008); and Cleland (1999) opined that projects are delivery mechanisms for change – counter arguments for which are found in Cooke-Davies (2001) who argues that Business Process Reengineering (BPR) is more effective a means of delivering change than project management. Additionally, elements of planning and control continued to be a concern, for example see Pinto (1999) and Verner et al. (1999).

Discussion of the developments in the time period of concern concludes with a survey paper published by Themistocleous and Wearne (2000) that analyzed the relative frequency of topics in two key project management journals from their inception to the end of the century. Therefore, I conclude that the predominant focus

has been on project planning, monitoring & control, risk analysis, information management, and related classical problems of project execution.

2.5.2 Creating New Environments 2000-2009

The key characteristics defining this decade are a focus on reexamination of the foundations of project management and a focus on the softer side of the discipline.

Project success and failure factors continue to be a concern within the literature, where project success or failure is analyzed from various perspectives such as, project manager competence (Crawford, 2000), project planning (Dvir et al., 2003), project personnel (Belout and Gauvreau, 2004), and standardization (Milosevic and Patanakul, 2005). Mills and Mercken (2002) worked on categorizing project success factors, while Williams (2003b) proposes that learning from a projects failure or success necessitates an inquiry into ‘what went wrong (or right) and why’. Other articles contributing to the concepts of learning and knowledge transfer within projects include e.g. (Prencipe and Tell, 2001, Kasavi et al., 2003, Bresnen et al., 2004, Eden et al., 2005, Williams, 2007, Williams, 2004, Williams, 2008). However, Newell et al. (2006) point out that often knowledge captured from one project is not used in another as the project team does not consider it useful and/or lacks awareness of how this knowledge could be useful in improving their processes. Certainly, there is a degree of ambiguity associated with qualifying a project as a success or failure (Boddy and Paton, 2004). However consolation is provided by the fact that these should not be viewed as polarized end states nor purely social constructions that leave practitioners with no power to act (Cicmil, 2006) but that project practitioners are the real protagonists.

More recent research takes a skeptical view of any attempt to categorize a project as a ‘success’ or ‘failure’ (Cicmil et al., 2009b). Echoing earlier cautions by Fincham (2002) who argued that such categorizations are highly subjective and as such are nothing more than social labels, which when applied give rise to either stigma or status. Interestingly, Lindahl and Rehn (2007) found that more articles are focused on project success, as focusing on project failure is against the norms of a field focused on success. Elsewhere, it is argued that measures of project success or failure are merely measures of the success or failure of a tool and not of the project, consequently resulting in a failure to consider the broader consequences of project

failures specially that of the social complexity of project environments (Cicmil et al., 2009b).

Work arising from the earlier criticism offered by Frame, Morris, and Maylor (discussed in Section 2.5.1), concerned itself with a reexamination of the foundations of project management. Researchers began to question the taken-for-granted, prescriptive methods within the discipline, and the normative aspirations and functionalist agenda of the standard making bodies (Clegg and Ross-Smith, 2003, Flyvbjerg, 2001, Johnson and Duberley, 2006, Reed, 1992, Alvesson and Willmott, 1996, Alvesson and Deetz, 2000, Cicmil, 2006). While others called for an examination of the social perspectives within projects (Packendorff, 1995, Pryke and Smyth, 2006, Söderlund, 2004a, 2004b, 2009b, Cicmil et al., 2006). This approach involves a shift in focus from the prescriptive methods to a more systemic understanding of projects, which requires an alternative genesis of projects as complex social settings characterized by tensions between unpredictability, control, and collaborative interactions amongst a diverse collection of participants (Cicmil et al., 2006). Certainly, this does not mean that traditional project management methods should be completely discarded (Hodgson, 2002), rather the proposal is to move forward with the knowledge gained to a debate on the soft issues of project management (Williams, 2005, cf. Pinto, 1999). Although, any new perspective on projects is based on certain philosophical (or more specifically ontological) choices made by the research community, caution is required however for such choices are not without consequence (Cicmil, 2006). As an example, the recent reexamination of projects has consequently rendered the static and non-reactionary project environments of the BoKs less useful and immediately replaced it with a world that is both complex and dynamic. However, some researchers would perhaps disagree that there ever was an assumption of a project environment that was static and non-reactionary, as they consider the prescriptive and control centric stance of the mainstream literature as an attempt to control complex worlds (Stacey, 2001, Wood, 2002).

Similar concerns are reflected in the ideology of the Scandinavian School of thought in project management (see, Cicmil and Hodgson, 2006b), which includes broadening the scope of project management, while being concerned with the broader context within which projects operate, and produce work that is empirically grounded (Sahlin-Andersson and Söderholm, 2002). Building on this agenda, Söderlund (2004a) argues in favor of a universal theory of project management and calls for research

that entails in-depth case studies that are process focused and conducted in real-time projects. Another interest of the Scandinavian School of thought is in the alternative conceptualization of projects, one such conceptualization is the focus on the temporary nature of projects organization or the ‘temporary organization’, which according to Turner and Müller (2003) extends the presently incomplete definitions of a project. Other works that are pertinent to this thought are by Sahlin-Andersson and Söderholm (2002), which offer a general discussion on temporary project organizations and is elaborated upon further by Kenis et al. (2009).

Relational issues such as those found in situations of partnerships and alliances are a concern taken up by Bresnen and Marshall (2000a, 2000b), such interrelationships have also been termed as a ‘nexus of contracts’ (Jensen, 2000). Studies along this line include affective stakeholder management (Jergeas et al., 2000) and the exploration of the link of project management with the principal (Söderlund, 2000). One proposal is to increase stakeholder involvement, such as that of the end-user, in project development (Jiang et al., 2002). This would certainly require involving stakeholder’s identification and their management – issues pertaining to which are discussed by Karlsen (2002). In a later article Karlsen et al. (2008) discuss various mechanisms through which stakeholder trust can be improved. A recent survey of literature covering 40 years of development by Kloppenborg and Opfer (2002) indicates that stakeholder management has received considerable interest between 1960 and 1999. In a later work, Kloppenborg et al. (2007) explore the mismatch between the project manager and perceptions of sponsor behavior. Whereas, Crawford et al. (2008) argue that project sponsors do not understand their role in a project and that extant literature on the topic is weak.

Additionally, concerns arising from the Latham and Egan reports continued to be a source of discussion. As an example, prospects of success of the British construction industry in an environment of PFI and PPP were discussed by Winch (2000), which concludes that the benefit derived from both the Latham and Egan reports is reduced litigation. In 2002, Sir Egan produced a new report entitled ‘Accelerating Change’ (Egan, 2002), which extends earlier recommendations. Hobbs and Andersen (2001) focusing on the front-end of projects discuss the concepts of partnering and alliancing in some detail, they conclude that optimum alliances / partnerships are contingent on projects and their contexts and that there is no one best solution. Bresnen and Marshall’s (2002) study takes an alternative look at the

case for partnering and alliances from the perspective of the complex and dynamic interplay of formal integration mechanisms and informal social processes, concluding that partnering is a varied and complex activity and does not necessarily solve all problems at the point of origin. Contracting from an organizational perspective is discussed in more detail by Mayer and Argyres (2004). Interestingly, Fellows (2006) observes that although a contract is an accentuation of legally encapsulated rights, duties, and remedies it achieves this at the expense of relational duties and reciprocity. Perhaps this is why Van den Berg and Kamminga (2006) argue for a different type of a contract, one which takes cooperation and interaction into consideration, in situations of partnering and alliancing as traditional contracts are competitive in nature. A comprehensive discussion of trust and contracts in alliances is provided by Vlaar (2008).

There is also a considerable focus on governance issues in projects, for example Winch (2001) provides a conceptual framework for governance of construction projects processes, taking influence from earlier work by Williamson on transaction cost economics. Extending the debate on governance in partnerships Clegg et al. (2002) concludes that good governance in projects is key in establishing better quality; bringing into perspective the relationship of projects with elements in their broader environment (see, Engwall, 2000). Further debate looks into the role of a project sponsor in project success and suggests that the sponsor's role should not be one of providing governance but rather support (Crawford et al., 2008). However, caution is necessary in the application of traditional project management control mechanisms to projects, as they do not work in complex environments (Remington and Crawford, 2004, Bourne and Walker, 2005), which agrees with earlier arguments presented by Williams (1999). Cicmil and Marshall (2005) concur and recommend that further inquiry into collaborative mechanisms that take into consideration the complex processes of communication and power amongst project actors, ambiguity and equivocality over project performance criteria, and the consequences of time flux (arising due to changes, unpredictability of work, and the paradox between control and collaboration) is needed. One such perspective argues that in conditions of dislocation, where the project is out of control and rational decisions are not working, what matters most are the quality of interaction with others and the nurturing of relationships (Cicmil, 2006).

Growing critiques of project management theory gave rise to the Engineering and Physical Sciences Research Council's (EPSRC) 'rethinking project management' research network and its agenda, the focus of which is on research pertaining to complexity, social process, value creation, broader conceptualizations of projects, and reflective practice (Winter et al., 2006). An active focus of research from this network is to examine projects and their management from a critical (realist) perspective, for contributions to this stream of thought see (Cicmil, 2006, Cicmil and Hodgson, 2006b, Cicmil and Hodgson, 2006a, Cicmil et al., 2006, Hodgson and Cicmil, 2006, Cicmil et al., 2009a, Hodgson and Cicmil, 2007). A sub-stream of this focus has been on project complexity, which is discussed in more detail in Section 2.8, contributions include: A discussion of various ideas from complexity theory in the context of complex projects (Cooke-Davies et al., 2007); measurement of project complexity (Williams, 2002, Geraldi and Adlbrecht, 2007, Shenhar and Dvir, 2007, Maylor et al., 2008); forecasting of cost, performance, and duration risk in complex projects (Palomo et al., 2007); tools and techniques for the management of complex projects (Remington and Pollack, 2008) – while, Thomas and Mengel (2008) argue that understanding complex environments is more valuable than using tools and techniques of project management; skills for complex project management (from a governmental project perspective) (Morse, 2009), and differentiation between structural and dynamic complexity (Whitty and Maylor, 2009). Similarly, a push to rethink information technology projects has also arisen (e.g., Sauer and Reich, 2009), however research on this agenda is not yet forthcoming. Another stream of literature has focused on relational issues pertaining to complex projects, a collection of works pertaining to this ideology can be found in Pryke and Smyth (2006).

The issue of culture in projects features prominently within the literature as well. One such example is Fellows (2006) who offers a concise treatment of the major developments pertaining to culture. A more pragmatic discussion on culture is found in Bredillet et al. (2010), which discusses the impact of Hofstede's national cultural dimensions on the project management deployment levels in various countries. They report that project management deployment is negatively correlated with power distance and uncertainty avoidance; there is no correlation with individuality or with masculinity; and a positive correlation with GDP/Capita. In examining the role of gender in project based work, Lindgren and Packendorff (2006) argue that the episodic nature of project work mandates an entirely different set of norms than

‘outside’ the project activities, as the project has a tendency to reproduce traditional masculinities even stronger. It is worth noting that culture can be studied from various vantages such as national, group, or individual, Draguns (2007) points out that focusing on only one perspective will cause us to overlook essential information available from another vantage. Other important works include the classification of projects into soft and hard paradigms (Pollack, 2007), uncertainty in hard and soft projects (Atkinson et al., 2008), a discussion on politics and conflicts within projects grounded in the PMBOK tradition (Irwin, 2008), and systems approaches to projects (Kerzner, 2009) – these are discussed in the context of project conflict & negotiation in the next section.

2.6 Conflict & Negotiation Literature in Project Management

The discussion up to this point has focused on developments constituting the core of conflict management literature. This section focuses the discussion by presenting a review of topic specific literature pertaining to conflicts & negotiation in project management. By the end of this section the reader will have a clear perspective on the work that has been done and areas where the literature is mute. Some of the issues related to project conflict & negotiation were discussed briefly in the previous section, these will be expanded upon in more detail here.

2.6.1 Conflict in the Matrix Structure

An early article by Gaddis (1959) indicated that conflict in projects would be a concern in the future. Conflict has remained a key concern in project management because of the matrix form of organization described earlier and interpersonal conflicts within the team. One reason that matrix structures are more conflict laden than typical hierarchical configurations is that the project workers are receiving instructions from two authority figures (Kirchof and Adams, 1989). Some have even proposed that the conflicts inherent in the matrix structure of organization are by design, and deliberately introduce conflicts between the managers in authority (Cleland, 1968, Cleland, 1974). Whether conflicts within the matrix form of organization are coincidental or deliberate, the existence of two authority figures is sufficient a

condition for conflicts to occur because either or both the employees may be committed to the organizational good, or the authority each possesses will manifest itself in the form of a power struggle between the two (Goodman, 1967), irrespectively opening the door to a resolution of some sort.

Certain characteristics are required for an individual to be deemed an effective conflict manager, in discussing the characteristics of an effective integrator Lawrence and Lorsch (1967b) propose the following traits: Affiliation, power, problem solving, and communication. Zikmann (1992) suggests that either an active or a passive response could be adopted in response to a conflict. An active response could be either creative or aggressive, examples include domination, distributive bargaining, compromise, and integrative bargaining. Passive responses include conflict denial, conflict avoidance, or capitulation, however, when parties adopt a passive response to conflict their needs or the needs of others invariably go unmet. Hodgetts' (1968) study on overcoming the 'authority gap' concludes that good negotiation skills are important, in using several authority surrogates, he found that those that are rated high or important are competence, personality & ability to persuade, negotiation ability, and reciprocal favor giving. These also reappear in later literature discussing key characteristics of competent project managers (for example, see Crawford, 2000). Adding to the list of authority surrogates Cicero and Wilemon (1970) propose a project managers ability to effectively allocate resources and resolve conflicts.

Although the technicist stance of the 1960s and 1970s is heavily criticized by authors such as Packendorff (1995) and Winch (1996), there was what Cicmil and Hodgson (2006b) termed a 'trace of organizational research and theories concerned with project organizational structures'. Much of these writings pertained to the skills and performance of project managers and are written, and dominated, by Gemmill, Wilemon, and Thamhain between the early to mid 1970s (Crawford, 2000). These studies are of value, as they constitute the core literature pertaining to conflict in projects.

2.6.2 Project Conflict Drivers

Gemmill and Wilemon's (1970) exploratory study identifies several types of influences that project managers use in eliciting support. Their research reveals that project managers use authority, reward, punishment, expertise, and referent power

as sources of influence. Issues stemming from violations of the boundary between the project and organization were a concern in Wilemon and Cicero (1970), violations of which are identified as leading to conflicts. In a follow up study Wilemon (1971) identifies several factors that were a cause of conflict in the Apollo program. These are:

- a great diversity of expertise among the team members
- low ability of the project manager to reward or punish
- broad objectives that were not well communicated
- disagreement over superordinate goals
- low authority over functional staff and resources

These factors are determined to lead to a greater potential for conflict to develop which in turn can effect the organization in various ways. Wilemon and Gemmill (1971), building on the work of Goodman (1967), extend the discussion by bringing to the fore the issues of power in matrix organizations. Gemmill and Thamhain (1973, 1974) studies on the project managers use of influence and project performance determine that authority of the project manager, a challenging assignment, and the expertise level of the project managers are amongst the high influencers on project teams performance, where as possibilities for promotion, friendship with the project manager, and coercion are the lowest. Butler (1973)'s concludes that conflicts may be functional or dysfunctional and may arise due to a reversal of interaction patterns, a disjoint between professional objectives versus project work requirements, due to a diverse set of experts working together, because of role ambiguity (specifically arising from the stress between project responsibilities and functional activities), competition for functional resources, and because of a lack of professional incentives for functional personnel to work as a part of a project team. The last paper in this series of discussions on project conflicts is by Thamhain and Wilemon (1975), in which the authors identify several factors over which project related conflicts take place. These are: schedule, project priorities, manpower resources, technical conflicts (task conflict), administrative procedures (process related conflict), costs objectives, and personality conflicts. Additionally, the study demonstrates the intensity levels of these factors over the various phases of the project life-cycle. Unfortunately, the authors do not clarify the reasoning leading to the choice

of the specific factors understudy. It is interesting to note that despite Thamhain and Wilemon's focus on information technology centric projects, findings of this study continue to be accepted as universal to all categories of projects globally (see Project Management Institute, 2008), and despite more than thirty years having passed since its publication are still considered relevant.

2.6.3 Conflict Handling Techniques

In addition to identifying conflict drivers, a segment of work during the late 1960s and early 1970s deals with the issue of conflict handling. Included in this area are Lawrence and Lorsch's (1967b) writings on the managers role as an integrator, according to them an effective integrator uses 'confrontation' (termed problem solving by Blake and Mouton, 1964) as the dominant response to conflict whereas functional managers use less smoothing and more forcing (the latter often resulting in win-lose situations). Thamhain and Wilemon (1974) extending the work of Blake and Mouton (1964) and Burke (1969) analyzed the effects of five conflict handling methods (forcing, confronting, compromising, smoothing, and withdrawal) on the intensity of conflicts experienced. They conclude that forcing or confronting functional resources results in increased conflicts in project environments, whereas confronting and smoothing leads to a reduction in conflicts with assigned personnel, and withdrawal leads to reduced conflicts – however, this may be because the overall performance of the project may have been compromised. Extending their own work, Thamhain and Wilemon (1975) conclude that problem solving or confronting is the most frequently used conflict management style used by project managers, followed by compromising and smoothing; forcing and withdrawal are ranked fourth and fifth. Certainly, a project manager is free to use the whole spectrum of conflict handling solutions when dealing with diverse personalities and different situations. This argument is strengthened by Thamhain and Wilemon (1977b, 1977a) finding that the choice of an effective leadership style is contingent on the existing project conditions. Complementary work by Hill (1977) using a previously developed framework by Schutz concludes that high performing project managers possess a much larger repertoire of responses to conflicts, are less afraid of disagreements, and are much more willing to approach conflicts.

2.6.4 Perspectives on Project Conflict

The matrix form of organization continued to be a concern in the conflict literature, work by Hax and Majluf (1981) professes that conflicts of interest amongst functional managers are best handled at the top level, however direct negotiation amongst the managers within the matrix setup should be preferred. The leaders role in handling a situation of conflict is latter elaborated upon by Thamhain and Wilemon (1987), which is instrumental in founding their later work pertaining to the power spectrums within projects (see Thamhain, 2006). In their study of the conflict management styles in matrix organizations, Barker et al. (1988) found cooperative styles of conflict management to be more productive.

With a few exceptions much of the project conflict literature of the 1990s focuses on various aspects of construction projects. For example, Dodd and Langford (1990) propose that variables influencing the form and extent of conflict in construction projects are: Role ambiguity, interpersonal skills of key players, and responsiveness to change. Other examples are found in an edited book by Fenn and Gameson (1992), where each chapter contributes to our understanding differently. As an example, Zikmann (1992) identifies several forms of commonly occurring conflicts including conflicts of interest, structure, value, relationship, and data. In examining the role of contracts in driving project conflicts, Clegg (1992) concludes that the formality of contracts and effective flexibility of the control functions often clash, so much so that rigid adherence to contracts is often not possible, thereby establishing a contract as a driver of conflict that results in functional conflicts.

Disputes, if pursued may give rise to negative affects, such as loss of good will (Cree, 1992). However, this does not mean that disputes should not be pursued at all, the author recommends that a strategic framework model should be used that will prove helpful in identifying the sensitive factors associated in a dispute and ultimately facilitate the process of creating a decision tree (ibid). Whereas Davies (1992)'s writing on conflict take the vantage of a contractor and in discussing the ambiguity of roles, conclude that the architect is the person least suited to have ultimate control of the contractual scene. Alternatively, Hellard (1992) bring the blame back to the customer and suggest that perhaps conflicts arise because the projects requirements are variable and need to be frozen; he also recommends that conflicts be dealt with as soon as and as near the time of their occurrence as

possible. Another perspective on project conflict is presented in Langford, Kennedy, and Sommerville (1992) who in examining the interface between the contractor and subcontractor conclude that most disagreements are over payments (for extra work or late payments) and are mostly resolved by the dominance of the main contractor or legal process. Litigation may be considered a failure of negotiation, such that the parties involved have been unable to reconcile. Newey (1992) in looking at the number of project related litigations in the UK conclude that between 1973 and 1980 there was a tremendous growth in the number of cases however in 1991 the number of cases decreased. Musing on the causes of the decrease Newey (ibid) rejects the idea of an improvement in the quality of work, increased reasonableness of the parties involved, success of the adjudicators, or the success of alternative dispute resolutions, rather he argues that it is due to certain decisions taken by the House of Lords restricting claims in tort for economic loss and because a number of companies liquidated. This brings to light the role of an ‘official referee’, who according to Newey (ibid) should not focus on settlement but rather focus on the disclosure of documents, exchange or experts’ reports and cross service of statement of fact to ensure that each party knows the details of the other’s case and is able to form a realistic view as to the prospects of success, resulting in an increased numbers of cases being settled between summonses for direction and fixing of trial dates. Similarly, Smith (1992) argues against arms length contracting, as it drives the per unit cost, proposing instead a need for amendments to public policy such that professional intrusions are introduced into the negotiation paradigm.

The work of Jones and Deckro (1993) in looking at role conflict within projects found that an excess of complexity was a contributor to internal conflicts. Although not directly related to conflicts, in his book *Power and Politics in Projects* Pinto (1996) speaks generically about conflict in projects by bringing together a vast variety of sources, indicating that organizational power struggles and politics may also be contributors of conflicts. A later report by Valaand (2002) combines together the concern of complexity and governance (although the author greatly ignores the foundations of complexity and the definition of a complex project adopted in their study is inclusionary and encompasses all projects rather than a selection of projects); the study concludes that understanding the human factor’s involved in a project are key to understanding why conflicts arise.

Kumaraswamy (1997)'s article provides three potential sources of conflict in construction projects, these are: External factors (e.g. political conditions, weather, and market conditions etc.), project teams (comprising e.g. the client, consultant, project manager, and contractor), and the contract (consisting of elements such as BoQ and method of measurement, drawing, conditions of contract, and specifications); this study goes on to present various categories and causes of project claims from the perspective of contractors, clients, and consultants; these they argue can be linked to project disputes. Interestingly, the study attempts to formulate a general strategy of conflict management founded on the concept of claims and conflicts, unfortunately the limited regional focus of the study would lend any formulated strategy invalid to cases dissimilar to those included in the study. In their analysis of the construction project industry, Gardiner and Simmons (1998) show that the dysfunctional effects of conflicts continue to be a concern. Lack of agreement regarding a common goal is identified as the principle reason for conflict, they argue that the problem lies not in the process but in the participants and that team-building activities can be consequential in decreasing conflict and increasing cooperation – a similar argument is found in Kharbanda and Stallworthy (1990) and Loosemore (1999) – and the earlier this is done the better (Phillips, 1985, Thamhain and Wilemon, 1975). Also, Sommerville and Langford (1994) argue in favor of the use of negotiators of stress and conflict and offer strategies for stress and conflict elimination or reduction early in the project lifecycle.

2.6.5 Conflict Resolution

Possible conflict resolution methods are discussed by Fenn (2006), who presents a concise description of various alternative dispute resolution (ADR) methods and provides a listing of techniques proposed by various government agencies concerned with projects. A preference for ADR is also found in literature dealing with information technology projects e.g. (Kim, 2002). Others, such as Al-Tabtabai and Thomas (2004) demonstrate the successful use of the analytical hierarchy process (AHP) in projects. While Randeree and Faramaway (2011) examine the resolution of project conflicts from a religious perspective, they argue that there is a positive correlation between conflict management styles found within Islam and cooperative conflict handling techniques. Others taking a decision theory perspective propose

using: The ‘graph model’ (Kassab et al., 2006), which is a mechanism built on graph theory & game theory and was first used for conflict resolution by Fraser and Hipel (1984); or using automated mechanisms to simulate conflicts (e.g. see Ng et al., 2007). On the other hand, Loosemore et al. (2000) conjecture that perhaps the occurrence of conflicts signifies a lack or failure of management, thus arguing against conflict management.

2.6.6 Conflict in Information Technology Projects

Outside of the issues pertaining to conflict within the construction domain a concise summary of general topics in conflict management is presented by Verma (1998). While, Vaaland and Håkansson (2003)’s work on the conflict within complex projects, directs us to six categories of conflicts, these are: Organization of work, data precision, work performance, human interaction, physical resources, and manpower resources. Whereas, Chen (2006)’s concern is the impact of conflict on the creativity of project teams, concluding that service-driven teams have very high task conflict, which in turn has a positive impact on the team’s creativity. Similar findings may be found in De Dreu (2006)’s article, which argues that moderate amount of task conflict is ideal as it proves innovation and higher intra-group trust within teams. In a later article, Vaaland (2004) takes a position that a conflict should be viewed as a mechanism for change, arguing that conflict adds necessary tension and motivation to a relationship that extends opportunities and innovation, which is opposite to the earlier position taken by Porter and Lilly (1993). While, Yeh and Tsai (2001) believe that participation by the project team members ameliorates substantive conflicts.

A stream of literature is available on conflicts in information technology and innovation projects, these are discussed next. In examining the interface between marketing and research and design (R&D) projects Souder and Chakrabarti (1978) identify several factors that cause conflicts, these are: Mutual task dependency, task-related asymmetry, differences in criteria for reward, functional specialization, dependence on common resources, and ambiguities in role descriptions and expectations. They argue that a project’s success depends on a clear definition of the problem, an understanding of the users needs, and completeness of information exchanged. The frustrations experienced during a project experiencing conflict are captured by a somewhat sarcastic project lifecycle model proposed by Taggart and

Silbey (1986), who suggest replacing the four stages of the traditional linear project lifecycle (conception, planning, execution/control, and closure) with: ‘wild enthusiasm, disillusionment, total confusion, search for the guilty, punishment of the innocent, and promotion of non-participants’. Boehm and Ross (1989) propose that the problem perhaps lies in the management styles adopted during a project’s management. They argue that although with a Theory X style of management there is sufficient control and less chance of conflict, Theory Y offers better control mechanisms and creates a more dynamic environment for the team to solve conflict – although with Theory Y there are more conflicts involved; a Theory Z approach on the other is more conducive to solving organizational conflicts but is silent on the issues related to interactions with other organizations (something that arises quite naturally in projects in the form of interactions with contractual entities). Instead they (ibid) advocate the use of Theory W, which remedies the issues identified above and creates a win-win situation through the use of proper planning, follow through on plans, and mitigation of project risk; for an example of the successful application of Theory W see In et al. (2001). Additional arguments in favor of the more participatory methods to resolving conflicts are presented by Robey et al. (1989), who concur that the use of participatory group activities is positively related to influence that ultimately positively affects conflicts and their resolution; and by Cohen et al. (2004), who argue for more relaxed time lines (arising from their belief that issues of time are universal to all types of conflicts), setting common goals, job-rotations, and co-location. In a follow up to their previously cited article Robey et al. (1993) demonstrate that there is a strong positive relationship between conflict resolution and project success, whereas there is a modestly positive relationship between participatory methods and project success. Similarly, Gobeli et al. (1998) argue that unresolved conflicts have a strong negative effect on overall product success & customer satisfaction and that high intensity conflicts decreases project team member satisfaction substantially, compared to the drop in satisfaction experienced in organizational conflicts. They (ibid) categorize conflict-handling techniques as either dysfunctional (smoothing, withdrawal, and forcing) or functional (confronting and give-and-take or compromising), arguing that the confrontational style is better suited for resolving conflicts even in organizations that prefer a give-and-take or compromising technique and that dysfunctional techniques should be avoided specially forcing, which is perhaps the only technique that has been shown to have a

statistically negative effect on success. Alternatively, Lam and Chin (2004) explore the relationship between a new products complexity, technical certainty, task interdependence, and power to conflict intensity and adopted conflict handling style. They argue that although high task interdependence increases the amount of interactions, it promotes collaboration thus arguing in favor of collaborative conflict handling, thus collaborative conflict handling styles would fare better – a similar stance is found in Lam et al. (2007)

2.6.7 Conflict in Software Development Projects

A list of conflicts, such as over goals, time, communication, and technical issues are also found in Boldyreff et al. (2004), however they add that configuration mismatches between components and unfrozen requirements are also possible drivers of conflicts. The potentials of conflicts amongst software developers and users is uncontested (Birkin et al., 2002, Yeh and Tsai, 2001) adding to the argument Jensen and Scacchi (2004) identify leadership and control sharing issues as sources of conflict in open-source (or community) software development efforts, which is categorized by Easterbrook (1993) as either cooperative or cooperative and in conflict. Their proposed conflict handling method advocates the use of community discussion mailing lists and popular technical forums or blog; these techniques are particularly applicable to software development efforts where the parties involved are abound in a virtual relationship and never or very seldom will get to speak face-to-face. Versioning conflicts are a topic of concern in Sarma and van der Hoek (2004), which arise due to the late discovery of conflicting changes to the software or because of a discrepancy in between the software and documentation – these are however, not new types of conflicts rather they represent examples of technical conflicts and configuration mismatches. Interestingly, Shaikh and Cornford (2004) point out that the choice of the versioning control system itself may be a conflict contributor. However, such conflicts offer those involved the opportunity to improve their norms of communication, encourages peer-reviews & use of various conflict resolution activities, and introduces openness of the process and product (ibid). Regardless of the type of conflict, every effort is necessary to expose, explore, and resolve it otherwise high technology projects are bound to fail (Reed, 2006). Although it should be noted that conflict management strategies generally have a positive impact however,

they are unable to substantially reduce the negative effects of interpersonal conflict (regardless of how it is managed or resolved the impact of interpersonal conflict is perceived negatively) (Barki and Hartwick, 2001). Within the literature there are recommendations for use of more contemporary approaches to conflict resolution e.g. In and Siddhartha (2001, 2008) argue in favor of the use of a visualization technique to conflict, for they believe it could be useful in bridging any gaps of perception between the parties involved.

The discussion on conflict in software projects concludes with Case and Piñeiro (2009)’s article that explores the identity conflicts between software developers and project managers, unraveling an ‘us versus them’ mentality to exist between the two roles. This chasm exists because of a power imbalance between the developers and project managers, where the programmers consider themselves above the managers in terms of organizational status (Piñeiro and Case, 2008) propelled by a peculiarity found within information technology projects where the project managers do not require educational credentials or technical knowledge exceeding those of the programmers (Case and Piñeiro, 2009). Clearly highlighting, in Sawyer (2001)’s words, the ‘complexity of the social processes’ involved.

2.6.8 Concluding Remarks

There has been a shortage since long, e.g. Evan (1965) pronounced that there is a scarcity of writing on conflict. A later survey by Themistocleous and Wearne (2000) too reveals that the situation has not improved much, they identify only seven articles on project related conflicts in two of the project management’s key journals. Our review of literature reveals that although conflict in general and conflicts in project environments has been studied to a sufficient extent, there is sufficient scope available for the study of conflict in complex project environment. The limited articles on conflict in complex projects identified above indicate the gap in the literature that this study seeks to address. Additionally, in depth studies that seek to build explanations and examine conflict from the perspective of all the parties involved, as suggested by Vaaland (2004), are severely needed. What little exists in the guise of literature on conflict in projects, from a practitioners point of view e.g. (Irwin, 2008) too does not deliver and are merely general discussions on political turmoils within projects and tackle to a lesser extent the issues of conflicts

in projects. The discussion presented above not only reveals that there is a scarcity of research on project conflicts but that what little research is available is not only dated but also severely limited empirically. Our literature survey identified a number of writings on project related conflicts between 1959 and 2009, with a major part of the work occurring during the 1970 – 1979 period.

Although it may seem that project management conflict gained some interest during 1990 – 1999 however, this increase is primarily attributable to an edited volume containing the work of various authors. In the last decade there has been only one book chapter discussing conflict in projects in general. Additionally, project literature has taken a decidedly normative stance by identifying lists of what the authors consider to be the key attributes, such as the top: Influences of a project manager, causes of conflicts, authority of project managers, conflicts within projects, and conflicts resolution methods. The authors accept and propose these attributes to be universally applicable and completely disregard the fact that their findings do not represent the whole picture but perhaps only a piece of the bigger picture. Finally, the findings are surprisingly lacking in context rich descriptions that would focus on building meaning and contribute to our understanding of the conflict and resolution interplay within projects.

It is interesting to note that the role played by conflict & negotiation in projects is of a particular type i.e. it differs from the standard two-party and multi-party negotiations that pervade social interactions. In that conflict & negotiation activities within projects contribute delays to a project and as projects are time-limited these delays have further consequences, in the form of more delays and more conflict & negotiations. In essence conflict & negotiation in projects and the delays they give birth to, contribute to feed-back loops within the projects, which result in increasing project complexity – the concept of complexity is dealt with in more detail in the following section. Thus, the very action of mitigating or resolving a conflict within a project in itself has negative consequences. The affects of project conflict & negotiation on project complexity are discussed in more detail in section 6.8 and in chapter 7.

The discussion in this thesis thus far has been from the perspective of traditional projects, however there is increasing criticism from both academia and industry stemming from three key issues, namely: The gap between project management theory and the reality in which projects operate, failure of the project management

standards in improving project success, and calls by the project management research community for alternative theoretical conceptions about projects and project complexity (Cicmil et al., 2009a). In agreement with the criticism and the underlying interest of this work in complex projects, the next section orients the discussion towards complexity in general and then complexity in projects.

2.7 Complexity Origins

This section concerns itself with the concept of complexity, which is another key area of focus for this study. The discussion contained in this section is concerned with complexity in general and gradually moves into a discussion on complexity in projects. Although some elements of complexity were encountered during Section 2.5 a more holistic treatment of the topic is presented below.

Complexity is a broad concept with offshoots in various disciplines, hence it is not possible, nor does it serve our purpose, to provide a detailed discussion pertaining to its origins. Therefore, this section presents a summary analysis of the foundations of complexity in general with the objective of providing the platform necessary for a detailed discussion on complexity in projects.

Etymology of the word ‘complexity’ has been traced back to 1721 and it conveys the idea of compositeness and intricacy (Barnhart and Steinmetz, 1999). The term ‘complexity’ comes from the Latin word *complexus* [which comes from *complecti*], which translated means to twine, ply, or braid (Cicmil et al., 2009a). In general, complexity refers to the difficulty of understanding a phenomenon in a given context or environment. In more specific terms its use signifies complicated interactions between many parts.

Although the concept of complexity is quite old, its application within academia can be traced back to the Macy Conferences held between 1946 and 1953 and the birth of cybernetics, initiated by Warren McCulloch in collaboration with the Josiah Macy Jr. Foundation (American Society for Cybernetics, 2010). Popular project management literature on complexity does not directly identify this conference as the precursor of complexity theory however, Cooke-Davies et al. (2007)’s statement that complexity theory’s origins are embedded in life-science, physical science, and mathematics does seem to concur; more specifically Thomas and Mengel (2008) identify developments in chaos theory (which explains the behavior of dynamic and

unstable systems), dissipative structures (which explains moment of dynamic stability and instability) and complex adaptive systems (which explains the behavior of systems with a large number of independent agents, and organizational evolution and learning) as significant to understanding the complexity of a projects. Others attribute the phrase ‘complexity’ to the work of Christopher Langton and Norman H. Packard (Horgan, 1995). Work presented by various scientists during the conferences contributed significantly to the foundational constructs of complexity. Three streams of focus, which originated between 1940 and 1960, are considered as the precursors to the development within the complexity literature; these may loosely be categorized as belonging to the three streams identified by Cooke-Davies et al. (2007). The first stream originates from the work of von Bertalanffy (1950) on systems theory; this stream includes concepts such as ecological systems theory, social systems theory, and system science. The second stream emanates from the work of Wiener (1950) on cybernetics and includes 2nd order cybernetics, socio-cybernetics, and e-science; and the third stream is dynamic system theory, which includes fractal geometry and chaos theory. Most of the literature on complexity is divisible into two strands one that uses complexity as a metaphor or an analogy, while the other seeks out literal applications.

Complexity is defined in various ways across a diverse set of disciplines and in relation to various systems, there is however, little consensus regarding the precise meaning of the term (Edmonds, 1995), for example, literature at one point identifies at least 31 definitions of complexity (Horgan, 1995), attributed to a list compiled by Seth Lloyd. However, the variety of definition of complexity are unified by concepts of ‘distinction’ (chaos i.e. variety and heterogeneity) and ‘connection’ (order i.e. redundancy and dependency). A good definition of complexity is provided by Simon (1982), who defined a complex system as ‘one made up of a large number of parts that interact in a non-simply way. In such systems the whole is more than the sum of the parts, not in an ultimate, metaphysical sense but in the important pragmatic sense that, given the properties of the parts and the laws of interaction, it is not a trivial matter to infer the properties of the whole’.

A working definition of complexity is provided by Mikulecky (2007) who defines it as *the property of a real word system that is manifest in the inability of any one formalism being adequate to capture all its properties; requiring that distinctly different ways of interacting with systems be found. Distinctly different in the sense*

that when in making successful models, the formal systems needed to describe each distinct aspect are NOT derivable from each other. From a sociological perspective it is considered to be a natural consequence of our society, where the entire complex of structural elements in our society contribute to what can be viewed as a ‘instrumental complex’, which is comprised of certain fundamental dimensions, such as: Occupation, exchange, and property; these are considered to be inextricably interdependent (Parsons, 1949) and it is due to the interactions between these that specific implementations of complexity arise within this macro societal level complex and it is one of these micro level complexities that concerns us i.e. the complexity of projects. However, further discussion on the granularity underlying complexity is necessary before moving further ahead. The terms complex and complicated are often used interchangeably in common dictum however, each has specific connotations therefore it would be pertinent here to differentiate between them. Additionally, the word ‘interesting’ has also been used as a synonym for complexity (Horgan, 1995), however as its not in prevalent use thus it is not discussed any further. According to Eriksson (1997), who in elaborating Le Moigne’s Systemic Theory defines complicated systems as having characteristics of reducibility and complex systems as those exhibiting surprising behavior; any attempts to simplify a complex system increases the complexity of the problem and will not yield a solution. Therefore, instead of relying on simplification, intelligence is needed to understand and explain a complex system; this requires a focus on the processes of actions and outcomes (consisting of three functions: Temporal, morphologic, and spatial transfer) comprising the system (ibid). Thus, transitioning from an understanding of complicated systems to complex systems requires a paradigm shift. Comparatively, a simpler dichotomy between complex systems and simple systems is provided by Mikulecky (2007), who defines a simple system as a formal system that provide a linear functional (yet approximate) model of the real. An amalgamation of the ideas of Eriksson (1997) and Mikulecky (2007) is presented in Table 2.12.

It begs a discussion then, what are chaotic systems? A possible answer is that chaotic systems are not complicated, complex or simple systems, however this does not clarify precisely what is meant when the term a ‘chaotic system’ is used. From the descriptions provided above it could be inferred that chaotic systems are those that are non-linear, completely unknowable, and thus fully unpredictable. As chaotic systems are beyond the scope of this study they will not be discussed any further.

Table 2.12: Paradigmatic Concerns in Understanding Complex, Complicated, and Simple Systems. Adaped from Eriksson (1997) and Mikulecky (2007)

Domain of Concern	Simple Systems	Complicated System		Complex System
Notion of Phenomenon	Complete System	Subject/State		Process
	The Whole & its Parts	Elements		Actors
	Comprehension	Analysis		Intelligence
Notion of System	System (inputs, processes, outputs)	Set		System (to be, to do, to become)
Notion of Organization	Entirety	Separation		Conjunction
Mode of Study	Structure & Organization	Structure		Organization
	Fragmentation	Simplification		Complexification
	Analytic (Synthesis)	Causal Explanation		Teleological Comprehension
Model of Reality	A Unified Simplification of Reality	Disjuncted of Reality	Simplification	Conjuncted Representation of Reality
Research Concerns	Application	Application		Projection
	Optimization	Efficacy		Effectiveness
	Computation	Explanation		Understanding
Validation	Response	Evidence		Relevance

From the discussion above it is conferred that complicated systems are those that are not simple (rather it could be argued that they are a collection of simple systems), but still knowable; conversely complex systems are those that are not fully knowable, but are reasonably predictable. These four systems could be placed on a continuum ranging from the simple to chaotic, see Figure 2.1. Interestingly, complex systems are considered to exhibit traits of both order and chaos simultaneously and are thus referred to as ‘chaordic’ – a term coined by Dee Hock. Fitzgerald (2001) and Fitzgerald & Eijnatten (2001) identified five properties pertaining to such systems: Consciousness, connectivity, indeterminacy, dissipation, and emergence.

Another way to understand a complex system is from a reductionist perspective i.e. a complex system can be broken down and examined where each of its pieces can be understood in its own right, however how all the pieces interact and function is a mystery, however such a reduction destroys important system characteristics irreversibly (this is explained in terms of set theory in Mikulecky (2007)); or in other words, permitting the use of an aphorism, the whole is greater than the sum

of its parts. Interestingly, it's been noted that complex behavior may be found in the simplest of systems as well (Williams, 2002).



Figure 2.1: The System Continuum, from the Knowable to the Unpredictable

Flood (1987) and Flood and Carson (1993) disassemble complexity into two parts: people and things; where the former contribute to complexity via abstract thought and the latter suggests concreteness and tangibility. Thus it could be argued that even the most concrete of situations may present itself differently due to the different possible perspectives of the people involved. In examining common definitions of complexity, Flood (1987) goes on to present a simple model of complexity, reproduced in Figure 2.2.

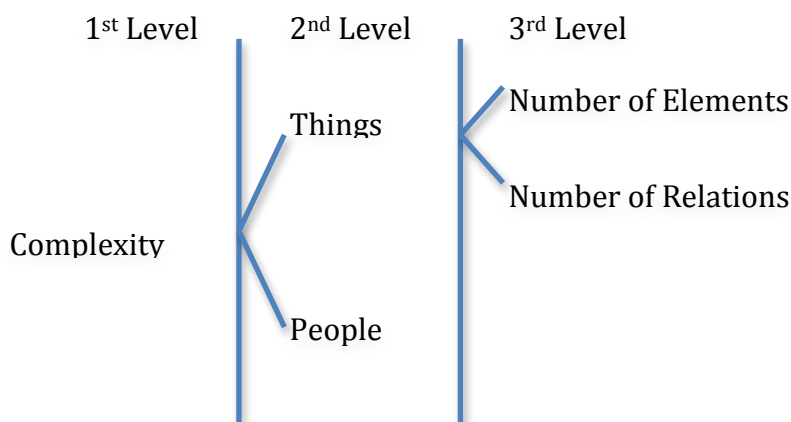


Figure 2.2: Disassembly of Complexity (Flood, 1987)

People play an integral role in complex organization, Senge (1984) envisions organizations as complex efforts that require five elements to exist if they are to be adequately managed, all of which are centered around the protagonist. The role of people in complexity is further elaborated by Stacey et al. (2000) who in presenting a collection of arguments proposes that people's role in complexity is composed of two elements. The first element, termed 'Social Interactions', is first presented by Langton (1991) who argues that the logical structure of the interactions rather than the properties of the agents involved is of import; Wheatley (1992)

attests to the importance of these interactions, suggesting that individuals cannot exist without such relationships. While, Kauffman (1993, 1995) argues that these interactions are driven by self-interest and a need for survival. The second element of people complexity, termed ‘Rules’, are derived from ‘schemas’ (Gell-Mann, 1994) that describe or predict others behavior, and ‘strategies’ (Holland, 1998) that suggest to an individual what to do as the game unfolds. Thus enabling the derivation of an extended model of complexity from the preceding discussion, this is presented in Figure 2.3.

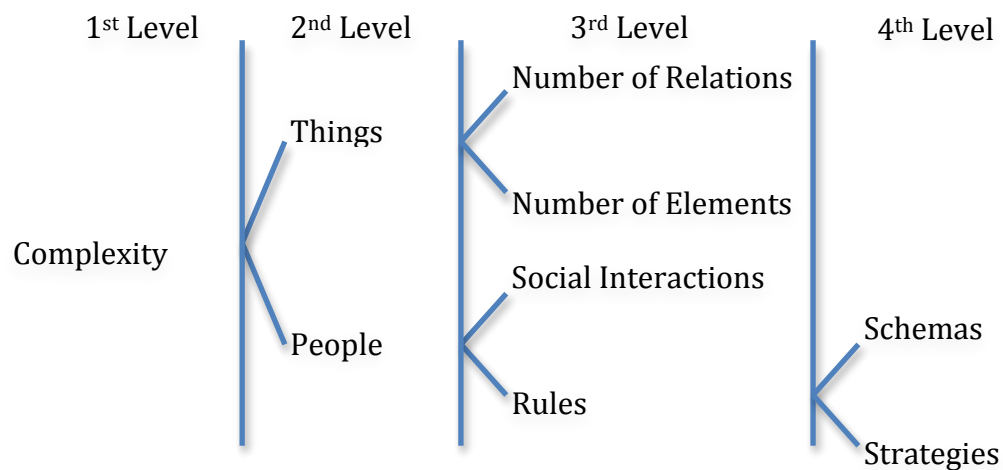


Figure 2.3: Disassembly of Complexity an Extended Model

Most writings on complexity in organizations are concerned with task complexity. Campbell (1988) proposes that task complexity increases when out of many possible paths only one leads to goal attainment, multiple outcomes are required, there is conflicting interdependence among paths, and goal attainment is uncertain. Wood (1986) establishes three types of task complexity: Component, coordinative, and dynamic. Component complexity relates to the number of actions and information exchanges during a task, coordinative complexity relates to the relationships underlying actions and information exchanges, and dynamic complexity relates to the changing state of the task environment.

As individual developments contributing to organizational complexity are beyond the scope of this work, the discussion will now focus on key literature within project complexity research.

2.8 Project Complexity

Project management has been a target of sufficient criticism for its failure to deliver projects on time, within budget, and within acceptable bounds of quality. A brunt of the extant criticism, emerging propositions, and research trajectories have focused on the failure of traditional project management as it applies to contemporary project environments (Cicmil et al., 2009a). Other authors have argued similarly, contending that traditional project management methodologies founded on control system thinking are no longer sufficient (Morris and Hough, 1987, Baccarini, 1996, Williams, 1999, Remington and Crawford, 2004, Remington and Pollack, 2008). It is therefore warranted to discuss projects from an alternative perspective i.e. that of complexity. However, this does not require starting anew by any means, as it has been argued that complexity theory of the form applied to organizations may be applied to projects (Remington and Pollack, 2008).

A general consensus found within the project management literature is that it is difficult to produce a precise definition of a complex project. Within the various definitions of complexity there exists a common theme of a number of parts or components and the interrelationships between them. Klaus and Liebscher (1979) definition of complexity, originating from the cybernetics camp, clarifies that ‘complexity is a character of a system defined by the type and number of relations existing between the elements, in contrast to the elaborateness of a system that is related to the number of different elements’. A hint of what these interrelationships are can be found in a helpful definition provided by the College of Complex Project Managers (College of complex project managers, 2006), which states that ‘complex projects are open systems and are characterized by recursiveness and non-linear feedback loops, which make them sensitive to small differences in initial conditions and emergent changes’. The College goes on to identify certain characteristics of complex projects that differentiate them from traditional projects, these are: Complex projects are to some degree disorderly, instable, emergent, non-linear, recursive, uncertain, irregular, and random; exhibiting dynamic complexity where the interactions between the various elements comprising projects are varied and undefined; and there is uncertainty in objectives and methods.

In another definition, provided by the National Audit Office, a complex project is defined as one where either ‘at the outset there is uncertainty over the route to

delivering the project outcome, or the project has aspects that have not previously been encountered; or there is high level of change in the outcome required during the projects lifetime' (Morse, 2009). The report goes on to identify several contributors to a project's complexity such as: Number of stakeholders, linkages pertaining to procurement, project duration, technological novelty, novel financing, and delivery timetable.

Some researchers consider construction projects are perhaps the most complex of all project types and argue that their complexity has been on a rise since the Second World War (Baccarini, 1996); unfortunately, what precisely qualifies construction projects as complex or the reasons for their increasing complexity are not clearly defined, furthermore the descriptions of a complex project could easily be applied to projects other than construction projects as well (Baccarini's model is discussed in more detail in section 2.6.2).

Two streams of research focusing on complexity in projects have been identified by Geraldi et al. (2011), these are 'complexity in projects' and 'complexity of projects' (Cicmil et al., 2009a). Those working along the 'complexity in projects' stream examine complexity from the perspective of various theories of complexity and associated abstract ideas (Manson, 2001), example contributors to this stream include: Cicmil (2003) on the complex responsive processes of relating; Cicmil and Marshall (2005) on project collaboration and social interaction in project procurement; Ivory and Alderman (2005) on the learning within complex projects; and Cooke-Davies et al. (2007) on the various theoretical perspectives underpinning project complexity. On the other hand, those working along 'complexity of projects' take a practitioners perspective on complexity, seeking to identify the characteristics of complex projects and striving to understand the responses of project participants and organizations in such situations (Geraldi et al., 2011). A somewhat similar view is found in Hass (2008), which rather unconvincingly attempts to map a catalogue of project management approaches to various types of projects based on level of complexity. Approaches appropriate to low complexity projects include: Waterfall, Rapid Application Development (RAD), and Critical Chain. Moderate complexity approaches include: Spiral, Agile, Lean, and Skunk Works. High complexity approaches include: Evolutionary Prototyping and eXtreme Project Management. However, much of Hass' (ibid) proposal is debatable, some disagreeable, and at times even contradictory; suffice it to say it's a gross over-simplification of a complex topic.

This study concerns itself more with the developments contributing to the ‘complexity of projects’ stream of literature, as it allows for a discussion of what precisely is a project’s complexity and ultimately leads to mechanisms for its measurement. This is not to imply by any means that the ‘complexity in projects’ literature is ignored completely, rather the focus is only on the key ideas of immediate pragmatic value stemming from this stream.

2.8.1 Complexity in Projects

Literature contributing to the complexity in projects stream of thought attempts to create a useful description of the complexity landscape (contributed to by the various theories of complexity) and highlights those developments which are of direct practical consequence to the field of project management (cf. Cicmil et al., 2009a). Some examples identified by Cicmil et al. (ibid) and Cooke-Davies et al. (2007) include: Sensitive dependence on initial conditions (also known as the ‘butterfly’ effect), strange attractors, fractals, edge of chaos, universality, dissipative structures, self organizing systems, emergence, complex adaptive systems, and indeterminacy. However, two immediate concerns arise: Firstly, although both texts referred to above offer a concise treatment of each development the reader is left to form associations from each to specific projects or instances within projects, which is attested to by Stacey et al. (2000) who argue that such parallels with complexity science serve as a source of analogies. Secondly, the review of literature for this study did not reveal any studies that contributed empirically to any of these concepts nevertheless as expressed before this does not discount the potentiality of their practical application. In an effort to make sense of the various concepts comprising this stream of research, I categorize them as belonging to non-linearity, emergence, or stability / instability. Table 2.13 presents a categorization of the key developments from within complexity science and provides a brief description of each. The categorical scheme used in the table is explained below.

Table 2.13: Key Topics in Complexity, adapted from Cicmil et al. (2009a) & Cooke-Davies et al. (2007)

Complexity Theme	Theory	Basic Assumptions
Non-linearity	Sensitive dependence on initial condition (also known as the 'butterfly' effect) Strange Attractors	<p>Questions the basic assumptions of linearity. Lorenz (1963) argues that although certain factors predict a given outcome, however paradoxically even minute changes can have significant and unpredictable consequences in non-linear systems such as complex projects.</p> <p>Argues that 'predictions of the sufficiently distant future is impossible by any method, unless the present conditions are known exactly' (Lorenz, 1963) and, although Lorenz's arguments concerned weather forecasting they fit equally well with projects. It could thus be argued that given the inevitable inaccuracy and incompleteness of a project's status at a given instance precise very-long-range forecasting would seem non-existent. Indeed the project could follow any attractor or behavior, contingent upon initial conditions. However, this does not mean that such projects cannot be understood or explained, the key to understanding would stem from unraveling the chain of events beginning with the initial conditions.</p> <p>Popularized by the work of Prigogine (1997), also includes spontaneous self-organization. These systems are characterized by the existence of feedback loops and simple rule-based behavior that gives rise to complex behavior.</p> <p>Complex adaptive systems arise naturally from self-organizing systems and emergence and are characterized by a capacity to learn from their experience and possess the ability to embody complex patterns into their repertoire (Cooke-Davies et al., 2007). It should be noted that self-organizing systems and adaptive systems are not the same as an example McMillan (2004) describes a laser beam as a self-organizing system and the human brain as a complex adaptive system.</p>
Emergence	<p>Dissipative structures</p> <p>Emergence</p>	<p>Dissipative structures are a particular type of complex adaptive systems, which are simultaneously receiving and transmitting energy. These systems are characterized by points of irreversible change (or bifurcations) where the new system states are unpredictable not because of inadequate information but because the outcome is inherently unpredictable (Cicmil et al., 2009a, Cooke-Davies et al., 2007).</p> <p>Emergence is a constituent part of dynamic / adaptive systems where because of the disequilibrium's in the system states new characteristics and patterns emerge. Emergence suggests an element of unpredictability, while simultaneously allowing for a tremendous amount of novelty and innovation.</p>
	Indeterminacy	A characteristic of complex dynamic systems that refers to the inherent indeterminacy of future state of events based on presently available information.
Stability / Instability	Fractals	Established by Mandelbrot (1982) are complex repeating geometric shapes following simple logic have been found at both the small scale and the large within nature. Indicating the possibilities of patterns that could exist within small or large projects.
	Edge of chaos	Popularized by Lewin (1993) encompasses the idea that dynamic systems demonstrate elements of both chaotic and orderly behavior. This has also been termed 'chaordic' by van Eijnatten (2004), who defined it as anything that is both orderly and chaotic at the same time, that has a pattern dominated by neither order nor chaos and that exists between order and chaos. Cicmil et al. (2009a) point to the work done at the Santa Fe Institute during the 1980s giving an example of an ant colony, which exhibits chaos at the individual level but order at the colony level. Leading to the possibility that seemingly out of control projects could be perfectly in order.
	Universality	An idea based on the concept of repeated patterns found across the fields of science such as the period doubling factor, the value of pi, and the Fibonacci Series. Such repeating patterns in unlike fields are considered universalities and could well emerge within projects as well.

Non-linearity acts in two ways, according to Prigogine and Stengers (1984) while non-linearity ‘may produce an order out of the chaos of elementary processes’ under different circumstances it may ‘be responsible for the destruction of the same order, eventually producing a new coherence beyond another bifurcation’. Stacey et al. (2000) propose that non-linearity brings recognition to the fact of amplification (of both positive and negative feedback) and introduces the notion of ‘non-linear responses into a chain of circular causality’ that may lead to unexpected and unintended results, thus eradicating the assumption that a system will move to equilibrium rather ‘the system is then no longer self-regulating but it is self-influencing: It may be self-sustaining or self-destructive’. A study of non-linear systems requires a realization that long-term predictability is impossible (Lorenz, 1963), as it is impossible to identify the initial conditions to the infinite exactness required (Stacey et al., 2000) however, short-term predictions are possible due to the theory of determinism, which is a theory of causality that is unconcerned with the measure of initial conditions.

The concept of emergence and self-organization builds upon the idea of non-linearity, according to Lewes (1875) *every resultant is either a sum or a difference of the co-operant forces; their sum, when their directions are the same – their difference, when their directions are contrary. Further, every resultant is clearly traceable in its components, because these are homogeneous and commensurable. It is otherwise with emergent, when, instead of adding measurable motion to measurable motion, or things of one kind to other individuals of their kind, there is a co-operation of things of unlike kinds. The emergent is unlike its components insofar as these are incommensurable, and it cannot be reduced to their sum or their difference.* Gell-Mann (1994) downplays the importance of emergence and does not consider it as a new causal principle, rather despite pointing to unpredictability, he emphasizes their predictability, which arguably occur in the form of recognizable patterns; although what emerges is inevitable yet unpredictable (Kauffman, 1993). The cause of emergence within organizations and cultural evolution is attributed to human irrationality (Marion, 1999), and the intertwined nature of power and conflict with cooperation (Kauffman, 1993, 1995).

Complex systems exhibit a paradoxical behavior of being stable and in-stable at the same time, the state of being between the two is referred to as the edge of chaos (Stacey et al., 2000), which is a formative cause i.e. the behavior of a complex

system is formed, or caused, by the dynamic qualities of the edge of chaos. Stacey et al. (ibid) clarify that the entities comprising the system are not the causes of the patterns that emerge, rather the cause is attributable to the dynamic interactions in the ‘edge’ and these are not chosen by any entity in the system, but evolve to the edge based on the internal dynamics of the systems. As novelty emerges at the ‘edge’ in an unpredictable way Kauffman (1993, 1995) urges for a shift in focus from predictability to explanation building. Interestingly, many organizational decisions actually contribute to the removal of a system’s stability and destroys its resilience (Stacey et al., 2000).

I end our discussion on complexity in projects by referring to the conclusion reached by Simon (1962) who proposes that complex systems formulate a hierarchical view of the world, in which complexity evolves from simplicity and the inherent near decomposability, allowing for short term predictions, and facilitate in our understanding by simplifying the systems behavior.

2.8.2 Complexity of Projects

Project management literature identifies a number of project dimensions and characteristics that constitute project complexity, these may be found in projects regardless of their size. The term ‘a complex project’ is elusive to define, however there is a general consensus that it refers to something more than size (Williams, 2002, Baccarini, 1996) and uncertainty (Baccarini, 1996). Initial attempts at defining project complexity are founded on two key concepts differentiation and interdependency (Baccarini, 1996), where differentiation refers to the number of varied elements and interdependency to the degree of interrelatedness amongst those elements (Williams, 1999); reflecting the underlying themes of complicatedness, involvement, and intricateness (as discussed previously in the discussion on the general meaning of complexity see Section 2.6). Differentiation and interdependency according to Baccarini (1996) could be examined within the contexts of various project dimensions, such as: Organizational complexity and technical complexity; and perhaps other dimensions of complexity e.g. resource complexity (Maylor, 2005), and structural complexity (Turner and Cochrane, 1993, Williams, 2002). A graphical representation of the complexity model proposed by Baccarini is presented in Figure 2.4.

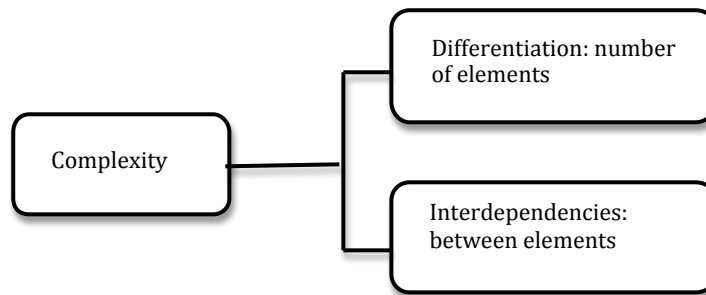


Figure 2.4: Baccarini's (1996) Model of Project Complexity

Surprisingly, Baccarini (1996)'s paper ignores the concept of uncertainty despite its reliance on an earlier explanation of technical complexity provided by Jones and Deckro (1993), which deployed the concepts of differentiation, interdependency, and instability of assumptions or uncertainty in its explanation building. Uncertainty, according to Turner and Cochrane (1993) occurs along two dimensions i.e. goal definition and method design, each contributing to the complexity of a project (Williams, 2002). Interestingly, Clegg (1990) argues that the main objective of all organizations is to absorb or reduce uncertainty arising from the extraneous environment and buffering the technical core from influence, thus reduction of technical uncertainty is the responsibility of technical specialists, achieved via flexibility and adaptability. Turner and Cochrane's uncertainty model is presented in Figure 2.5.

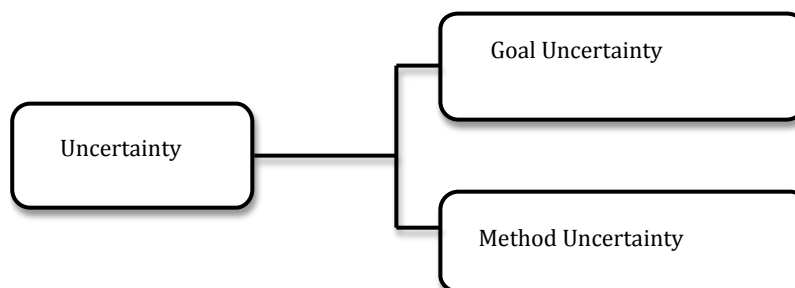


Figure 2.5: Turner and Cochrane's (1993) Model of Project Complexity

Gidado (1996) defines four types of uncertainties, which he proposes originate from within the task, the environment, and the resources employed. However, of the four uncertainty types proposed the only one not covered by Turner and Cochrane's model is environmental uncertainty; thus, justifying the addition of an added dimension to uncertainty. In a later article Shenhar et al. (2002) divide uncertainty into internal and external, where internal uncertainty affects the process of product design while external uncertainty is limited to the accuracy and predictability of customer requirements; however, this too is a rewording of the Turner and Cochrane model.

Williams (2002) argues that most of the concerns regarding a project's complexity pertain to its (product) structural complexity – also referred to as structural intricacy (Moldoveanu, 2004), thus his model of project complexity is based on structural complexity, which refers to the number of ways in which labor can be divided into distinct tasks and the coordination needed to achieve the task (cf. Mintzberg, 1973). Additionally, Williams (2002, 2005) contends that uncertainty (both aleatoric and epistemic) adds to the complexity of a project, hence it can be viewed as a constituent dimension of project complexity. Conversely, Tatikonda and Rosenthal (2000) propose that complexity contributes to uncertainty. Remington et al. (2009) clarify that uncertainty causes technical complexity, while directional (goal) complexity causes uncertainty. De Meyer et al. (2002) group uncertainty into four categories: Variations, foreseen uncertainty, unforeseen uncertainty, and chaos. Williams' model of complexity is presented in Figure 2.6.

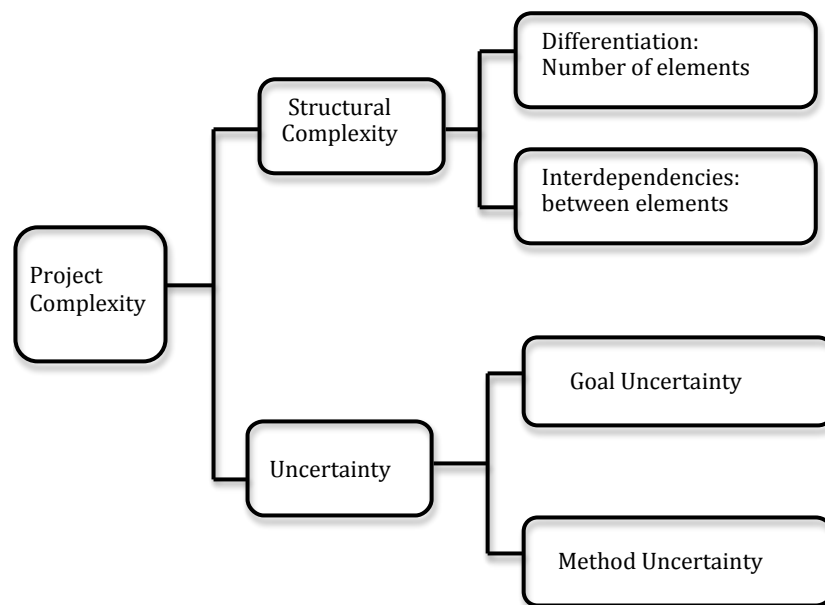


Figure 2.6: Williams' (1999, 2002) Model of Project Complexity

Interestingly, Remington and Pollack (2008) remark that structural complexity is often referred to as complicated rather than complex, the real complexity they argue arises from the difficulty in managing and monitoring the large number of different tasks and activities (the difference between complicated and complex has already been discussed in Section 2.7). Following in the tradition of Baccarini, Williams (1999, 2002) uses the concepts of differentiation and interdependence to make sense of structural complexity, which according to him is composed of sequential complexity and feedback complexity. Here sequential complexity is used to define the

number of elements that are interconnected (differentiation), whereas feedback complexity refers to the nature of these interconnections (interdependence). Work by Scott and Davis (2006) argue that technical complexity and structural complexity are directly related, in that greater the technical complexity the greater the structural complexity – where the structural response to technical diversity is organizational differentiation as technical complexity does not invariably give rise to greater complexity of structure, rather it nourishes greater complexity of the performer. Additionally, greater technical uncertainty translates into fewer formalisms and centralization but more coordination and information requirements.

Thus, coming to terms with the complexity of a project requires not simply counting the number of interdependencies, but rather to understand their nature as well (Baccarini, 1996, Williams, 2002). Three types of fundamental interdependencies have been identified these are, pooled, sequential, and reciprocal (Thompson, 1967); a pooled interdependency is the simplest interdependency in that each differentiated element contributes a discrete input to the project and is not sequence bound, while the sequentiality of the inputs/outputs is a concern of the sequential interdependency, where the output of one element becomes the input for another. Both Baccarini (1996) and Williams (2002) confer that reciprocal interdependency, consisting of feedback and loops, represents the highest level of complexity and is a catalyst for project complexity (also see, Richardson, 2008). Thompson (1967) goes on to argue that pooled interdependence is best managed through standardization, sequential interdependence through plans and schedules, and reciprocal interdependence by feedback and mutual adjustment; where each type of coordination will have associated with it certain costs.

In a more recent work Remington and Pollack (2008) contend that all projects exhibit attributes, such as: Interconnectedness, hierarchy, communication, control, and emergence; and that that most large and many small projects also exhibit certain additional characteristics such as: Phase transition, adaptiveness, and sensitivity to initial conditions – which happen to be the characteristics of complex adaptive systems; thus, conjecturing that complex projects are best understood in terms of complex adaptive systems than as simple systems. Where phase transition entails an adaptation in response to a changing environment; adaptiveness is the responsiveness of the complex system to a changing environment, which could take one of two forms, maintaining control or improving: Against a single fixed external

reference point or against a set of variable external reference points; and sensitivity to initial conditions refers to the unanticipated and often catastrophic effects caused by the miniscule initial conditions in a complex system (perhaps best expressed by Lorenz's 'butterfly effect') (ibid). Interestingly, it could be argued that Baccarini's primary criteria of a complex project i.e. differentiation and interdependence are captured by Remington's characteristics of all projects in general, what then is a complex project from Remington and Pollack's perspective is one that exhibits phase transition, adaptiveness, and sensitivity to initial conditions. Whereas, Cicmil et al. (2009a) propose that in order to classify a project as complex requires focusing on 'the level of non-linearity, evolution, emergence and radical unpredictability in the interaction among, and behavior of, project participants, and their implications for the management of a project'. They go on to clarify that the existence of certain pertinent concerns within project environments when combined illustrate project complexity, these are: Persistent ambiguity and equivocality of project goals and contradictory and conflicting understandings of project success; inherent unpredictability of future events; and complex multi-agency interfaces, social interaction, and processes of relating.

Therefore, it could be argued that Williams' model (see Figure 2.6.), although simplistic and helpful, ignores the effects of social interaction and their contribution to project complexity. Thus, an extended model of project conflict is needed; this is achieved by integrating the two models presented in Figures 2.3 & 2.6 and also extend Turner and Cochrane's model of uncertainty (see Figure 2.5) by adding the component of environmental uncertainty (discussed above), this is presented in Figure 2.7

The discussion so far has established a theoretical description of project complexity, the next section is concerned with the pragmatic concern of its measurement.

2.8.3 Assessing Project Complexity

Various measures of project complexity have been proposed. However, this quickly leads to an epistemological problem, as Moldoveanu (2004) puts it 'how would we know a complex phenomenon if we saw it...or how can complexity of different phenomena be compared?', thus raising concerns pertaining to the internal validity of any proposed measure.

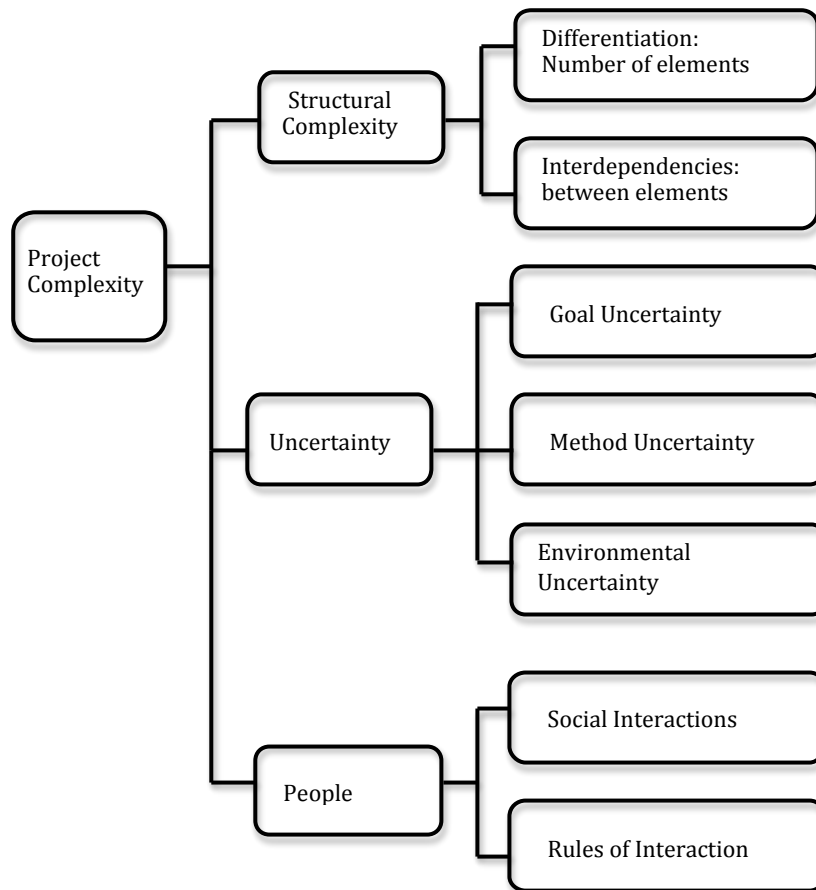


Figure 2.7: An Extended Model of Project Complexity

In discussing a measure of project complexity Gidado (1996) taking a stance similar to that taken in the early writings of Von Neuman on computational complexity, proposes that a numerical measure of complexity could exist however, subjective measurements should be avoided; and that there is a threshold level of complexity below which a system (or in our case a project) would behave in some simple sense (Rosen, 1987). Thus, Gidado (1996)'s complexity measure attempts to not only measure complexity but also to determine its threshold, basing their measurements on project time and cost.

Shenhar and Dvir (2007) measure of project complexity, founded on their earlier work (see, Shenhar and Dvir, 1996, Shenhar, 2001, Shenhar et al., 2002) is closely aligned with William's model of project complexity, see Figure 2.6. Their proposed measure of complexity is based on four factors: Novelty, technical, pace, and complexity (termed the 'diamond approach'), each having its own constituent components. Novelty deals with uncertainty, technical deals with technical uncertainty, complexity deals with complexity of the task/product/project organization, and pace is concerned with urgency. Tatikonda and Rosenthal (2000) and Pundir

et al. (2007) in relating technological novelty to technical maturity suggest that immaturity leads to task uncertainty. The diamond approach works by identifying the gap between the actual diamond vs. the desired diamond.

Remington and Pollack base their assessment of a project's complexity by looking at the sources of complexity i.e. structural, technical, directional, and temporal. Remington et al. (2009) explain that structural complexity arises from non-linearity and emergent behavior, which can stem from the various task based interconnections; technical complexity arises from unknown or untried design characteristics; directional complexity has to do with improper goal definition; and temporal complexity refers to project volatility over time.

Remington et al. (2009) suggest differentiating between the dimensions and severity of complexity; the former refers to the sources of complexity and the latter to their impact. Thus, each dimension of complexity will have its own associated severity; they go on to identify 9 severity factors and 5 dimensions of complexity. The perceived severity is contingent on: Expertise of the team, project organizational structure, and the interface with other performing organizations. Their suggested complexity measure is based on a cognitive approach, which seeks to assess people's perception of project complexity rather than attempting to measure the actual complexity of the project.

Other examples are: Geraldi and Adlbrecht (2007) who in examining three groups of complexity i.e. faith, fact, and interaction, found the complexity of interaction to be a primary concern within projects; Jaafari (2003) in the process of issuing calls for greater research on complex projects proposed a classification of four different projects types by their complexity; Maylor et al. (2008) in examining a managers perspective of project complexity classified projects into one of five dimensions of complexity mission, organization, delivery, stakeholders, or team (termed MODeST); and Williams (2005) suggests the use of systemic modeling techniques.

2.9 Concluding Remarks

This chapter has provided a detailed review of literature on three different topics (1) history of project management, (2) conflict & negotiation in general and conflict & negotiation in projects, and (3) complexity in general and complexity of and in projects. In presenting literature contributing to the history of project management

a unified stance promoting a human-side of project management was found, which plays a key role in the literature on conflict & negotiation, for there are no conflicts or negotiations without people. Literature supporting a similar stance in project complexity was showcased in Section 2.8.2.

In examining project conflict & negotiation literature, it was found that conflict is viewed as a trait characteristic, and artifact of competency, a consequence of cultural difference, or a style of behavior (Blake and Mouton, 1974, Kilmann and Thomas, 1975, Putnam and Wilson, 1982) – these go on to play a key role in defining the research questions for this study. An assumption purveyed by these approaches is that conflict is deterministic, therefore reductionist strategies are advocated and normative models suggested. However, literature of the late 1990 and early 2000 takes a critical view of project management. Advocating the stance that there is evolution and learning, therefore, shattering any notions of determinism and predictability. Additionally, literature on negotiation seems to have gotten stuck within the 1960s, i.e. in the work of Blake and Mouton (1964) and the 5 negotiation styles (see for example, Wood and Bell, 2008, Thomas et al., 2008, Ma et al., 2008, and Bresnahan et al. 2009).

Complex projects are defined as those possessing certain traits (see, Williams, 2002) such as goals, methods, elements, and interconnections; whereas, this study proposes the addition of roles and rules to the model; as well as, environmental uncertainty. Therefore, there is a need to explore these issues in more detail. Measures of project complexity were explored to some detail, however, most fell short of providing a quantitative measure.

The current study begins with an investigation of select projects from the perspective of the project manager and the project management team. Projects included in the study come from one of three sectors, the focus of the study is to unravel how conflict & negotiation are played out on the case projects and consequently how these contribute to it complexity. NB: A detailed discussion establishing the methodology and empirical plan for the study is presented in Chapters 3 and 4. To that end, research questions are designed so that a deeper understanding of how conflict & negotiation on projects create enduring effects by giving rise to loopbacks and recursions.

2.10 Research Questions

In approaching the survey and selected case projects respondents this study focuses on understanding the role of conflict & negotiation in the complexity of projects. To this end, it is important to attempt to develop an incrementally progressive understanding of this study's topic of interest. As discussed in the section before, the extant project management literature is advocating for more detailed exploration of projects (using case studies and phenomenological inquiries) and focusing on the human element within projects. Thus, rather than striving for normative outcomes preference is for subjectivity and *in situ* understanding. To this end, I begin by posing research questions that serve the purpose of establishing a direction for the study, narrows its focus, and address the gap in the literature. The primary research question of the present study arises as a direct consequence of the literature gap. As there is limited literature available that explores the role of conflict & negotiation and project complexity therefore, the following primary research question is posed.

Primary RQ: Do conflicts and negotiations make a project complex, or is it that projects that are already complex have more conflicts and negotiations?

Following in the footsteps of the proposals put forward by the making projects critical movement (Cicmil and Hodgson, 2006a), I begin by questioning the very foundations of project conflict & negotiation literature. The first research question stems as a result of Thamhain, Wilemon, and Gemmill's work and asks:

RQ1: What drives project conflicts & negotiations and how?

The literature has identified numerous type of conflicts and negotiation styles, however there is silence regarding how project behavior differs when there are conflicts and negotiations taking place. Further, this study seeks to identify patterns of responses in the behavior exhibited by projects. In this regard the second research question asks:

RQ2: How do projects behave in the presence of conflict and negotiated actions? and is there a pattern to this behavior?

The role of culture is clearly pointed out in the literature as having a significant role in projects (e.g. Hofstede, 1991) therefore the third research question of this study focuses on the role of culture in project conflict & negotiation and asks:

RQ3: Does a project having a heterogeneous cultural makeup experience conflict differently than a project with a homogeneous cultural makeup, and if so how?

The last research question arises from realization that most of the literature on negotiation is concerned with negotiation styles (i.e. those defined by Blake & Mouton (1964)) however, there is no know-how available regarding negotiation tactics. The last research question asks:

RQ4: How does a project team working in a project experiencing conflicts manage the conflict? What negotiation tactics do they use, when do they sue them, and why?

Taken together, these research questions establish the basis to explore the role played by conflict & negotiation in the complexity of projects. These research questions and their associated research objectives are explored in more detail in Chapter 3.

Chapter 3

Methodology

3.1 Introduction

Building on the discussion contained in Chapters 1 and 2 this chapter elaborates on the philosophical and methodological stance of this study. Discussion contained in the chapter begins by setting the research objectives and questions for this study; followed by a walkthrough the ontological, epistemological, and methodological decisions stemming from the research questions and driving the design of this study. As a conclusion to the chapter I set the ground work for the theory that will be used during the discussion of the data collected as a result of the work. The last section of the chapter concludes the discussion on how the adopted methodologies constituting this study come together.

This research study is implemented in the North-West region of Pakistan. Contextual information pertain to the geographical region where this study is implemented and the reason why this region was selected is presented in Chapter 4 Section 4.3.

3.2 Research Objectives

In Chapter 2 the literature gap that this study seeks to address was identified. The objectives established for this research study are to examine, understand, and explain the role played by conflict & negotiation in project complexity. Building on the review of literature, prior experience of the researcher in various projects, and preliminary conversations with different project managers and project team

members, the following list of research objectives (RO) has been established for this study – these form the basis of the research questions for this study, discussed in section 3.3:

Table 3.1: Research Objectives

Primary RO:	To determine the nature of relationship that exists between conflict & negotiation and project complexity.
RO1:	To identify the type and nature of intrinsic factors contributing to conflict & negotiations within projects and the nature of their contribution.
RO2:	To examine how projects are affected by conflicts & negotiations.
RO3:	To explore the role of culture in how projects experience conflict & negotiation.
RO4:	To explore the effectiveness of project teams in situations of conflicts & negotiations.

3.2.1 Elaborating the Research Objectives

The primary research objective (RO) of this study seeks to unravel the relationship between project conflict & negotiation and project complexity. This research objective is broken down into four research sub-objectives. The initial set of objectives (1 & 2) are interested in finding the drivers of conflict & negotiation and the consequent behavior they generate in the project. While, the latter objectives (3 & 4) are concerned with exploring the role of culture and the effectiveness of the project teams respectively in such situations. Each RO is elaborated below.

RO1 seeks to determine which factors contribute to conflict & negotiation taking place within a project. Emphasis is on identifying both direct and indirect contributory factors and on understanding what effect (influence) they produce within projects. Literature contributing to this objective has already been discussed in Chapter 2 (see Tables 2.3 and 2.4).

RO2 begins from where the first objective concludes and seeks to understand how projects behave and respond in the presence of conflicts & negotiations. Foundational work underlying this objective was discussed in Section 2.6.

RO3 extends the inquiry further and seeks to explore the varying responses of projects to conflict & negotiation due to the cultural makeup of the projects.

Limited literature exists that explores the cultural perspectives of project conflicts as discussed in chapter 2 Section 2.6.

RO4 seeks to determine whether the conflict management tools and techniques employed by the project personnel are effective and valid in regards to the problems and opportunities facing a project.

3.3 Research Questions

The process of conducting an empirical inquiry requires a research design to be made explicit, a fundamental component of which is the research question(s). The importance of a research question, the depth of exploration required to answer it, and its overall impact on the research project is made clear by Easterby-Smith et al. (1995), who argue that the research design and ultimately any decisions pertaining to research must refer to and follow from the research question(s) and objective(s). The research questions (RQ) posed in response to the RO's discussed in section 3.2 are presented in Table 3.2.

Table 3.2: Research Questions

Primary RQ:	Do conflicts and negotiations make a project complex, or is it that projects that are already complex have more conflicts and negotiations?
RQ1:	What drives project conflicts & negotiations and how?
RQ2:	How do projects behave in the presence of conflict and negotiated actions? And is there a pattern to this behavior?
RQ3:	Does a project having a heterogeneous cultural makeup experience conflict differently than a project with a homogenous cultural makeup, and if so how?
RQ4:	How does a project team working in a project experiencing conflicts manage the conflict? What negotiation tactics do they use, when do they use them, and why?

3.4 Mapping Research Objectives to the Research Questions

Well posed research questions exhibit certain characteristics, according to Silverman (2008) research questions have to be workable i.e. they are answerable, interconnected, and substantively relevant (i.e. they are interesting to study and worth exploring further). Punch (2005) clarifies that characteristically workable research questions are ones where one can see what data is required to answer them, and how the data will be obtained (termed answerability); and that the research questions are meaningfully interconnected to each other.

Table 3.3 presents a matrix aligning the study's objectives, type of research questions, and data collection instruments as suggested by the 'answerability' and 'interconnectedness' concepts of Punch (2005). The primary research question is omitted from the table as it is answered indirectly via the answers to research sub-questions 1 through 4; data collection instruments outlined in the table are discussed in detail in Section 3.8. Each research question is classified by its type using the categorization proposed by Yeager (2008) i.e. descriptive, normative, and relationship. Descriptive questions, as the name suggests, describe certain characteristics such as who, what, how many, and how much; normative questions, focus on 'what is' and compare it to 'what should be'; and relationship questions, address relationships between variables and may be phrased in terms of association or covariance, or may even seek out cause and effect, or impacts or outcomes, and may predict the future impact (ibid). This study includes all three types of questions, however, this is not an issue as a single study could involve multiple, that is, all three types of research questions (Johnson, 2002, Trochim, 2005).

3.5 Discussion on Ontological and Epistemological Paradigms

Before embarking on a discussion of the study's philosophical foundation a concise overview of the major research paradigms is presented; the philosophy adopted by the study is then explicated in Section 3.6.

Table 3.3: Aligning the Research Objectives with the Research Questions

Objectives	Research Questions	Type of Research Questions	Possible Data Collection Instruments
To identify the type and nature of intrinsic factors contributing to conflict & negotiation within projects and the nature of their contribution.	What drives project conflict & negotiations and how?	Descriptive Relational	Questionnaire, interview, documents & records, and observations
To examine how projects are affected by conflicts and negotiations.	How do projects behave in the presence of conflict and negotiated actions? Is there a pattern to this behavior?	Relational Descriptive	Questionnaire, interview, and documents & records
To explore the role of culture in how projects experience conflicts and negotiate.	Does a project having a heterogeneous cultural makeup experience conflict differently than a project with a homogeneous cultural makeup, and if so how?	Descriptive Relational	Questionnaire, interview, and observations
To explore the effectiveness of project teams in situations of conflicts & negotiations.	How does a project team working in a project experiencing conflicts manage the conflicts? What negotiation tactics do they use, when do they use them, and why?	Relational Descriptive	Questionnaire, interview, documents & records, and observations

Foundations of a research effort rest on the epistemological commitment (ontological grounding) of a researcher, who influences the research question(s) and consequently the chosen methodologies, and the evaluation mechanism of the output (Johnson and Duberley, 2006). Prevalent epistemological paradigms include positivist, conventionalist, postmodernist, critical theory, pragmatism, and critical realism (ibid). Other paradigms include: Realism, interpretivism, objectivism, subjectivism, functionalist, interpretive, radical humanist, and radical structuralist – for the sake of simplicity I categorize these as mixed paradigms as they nestle between positivism and interpretivism. The importance of epistemology is clarified by Rorty (1979) who argues it allows us to ‘find “foundations” to which one might cling, frameworks beyond which one must not stray, objects which impose themselves, representations which cannot be gainsaid’.

Most management research belongs quite discretely to either the *positivist* or *interpretive/phenomenological* paradigms or borrows from both and adheres to a

mixed paradigm (Johnson and Onwuegbuzie, 2004). However, the boundaries between the paradigms, and at times the characteristics of the paradigms themselves, are quite gray. For example, at one time around twelve flavors of positivism were identified (Halfpenny, 1982). Positivism and phenomenology have each been argued as addressing the philosophical extremes of social research (Easterby-Smith et al., 1995, Symon and Cassell, 1998, Miles and Huberman, 1994). Researchers have expended considerable effort either defending their chosen paradigms or attacking the choice of others. Classic examples of this are the, so-called, paradigm “wars” between supporters of positivism and phenomenological enquiry (Johnson and Onwuegbuzie, 2004). The former professes the superiority of ‘hard, generalizable’ data and the latter the virtues of ‘deep, rich observational data’ (Sieber, 1973). Purists on either side see their paradigm as the ideal and implicitly advocate against mixing paradigms and methods. However, arguments to the contrary put forward by Howe (1988) who explicitly advocates the free mixing of paradigms and methods as required by the research problem. In practice a marked bifurcation has been noted amongst the researchers of social science, where during the period from 1960s to the 1990s the North American’s journals become more positivistic and the British journals more phenomenologist (Gartrell and Gartrell, 2002).

3.5.1 Positivism

Positivism is personified by a distrust of abstraction and a preference for observation, its central tenant being empiricism. Thus, the positivists prefer not to go beyond the data into theoretical yet unobservable social forces such as class, power, socialization or culture (Given, 2008). A project frequently associated with positivism is quantification; indeed for many, positivism is more or less synonymous with the quantitative approach. Essence of the positivistic tradition is observer independence, value-freedom, causality, a hypothetico-deductive approach, operationalization, reductionism, generalization and cross-sectional analysis (Easterby-Smith et al., 1995). This type of research emphasizes a structured methodology to ensure replication and focus on observations that will lend themselves to statistical analysis (Given, 2008).

Comte’s positivism was extended by the work of the ‘Vienna circle’ during the late 1920s, commonly referred to as Logical Positivism, adding the dimension of logical analysis and verifiability to the previous commitments to empiricism. Karl

Popper's work led to its 'death' and gave rise to the hypothetico-deductive tradition of positivism (Easterby-Smith et al., 1995), making 'falsification' the primary tool of a positivist. Thus, excepted truth would hold until they are negated or falsified. While the positivists most frequently refer to Popper, he made a significant contribution to the qualitative tradition in the form of his Three World theory and Situation Analysis (Gorton, 2006).

Following Popper's criticism of the logical positivists, positivism has evolved into 'post-positivism' that is influenced by Weber's notion of *Verstehen* (an empathic understanding of phenomena) and Schutz's work on phenomenology (Given, 2008) – popularized by Weick's use of his ideas in his work on 'sensemaking'. Post-positivism tries to understand reality not only through rational thoughts and reflections, but also looks at the affective components that contribute to the constructions of an actor(s) reality (ibid), bringing it closer to the phenomenological paradigm. Other post-positivistic philosophies are Marxism, critical theory, post-structuralism, and postmodernism.

3.5.2 Phenomenology

Phenomenology is rooted in the work of Husserl (Pietersma, 2000, Solomon and Sherman, 2003) and aims to study the variability of human experience in social phenomenon. A key concern of phenomenology is to capture a subject's immediate pre-reflexive experience of a phenomenon i.e. before it is conceptualized, theorized, categorized, or reflected upon (Given, 2008). This gives rise to its founding problem, how can experience be 'prespectival' while the objects we experience transcend those experiences (Solomon and Sherman, 2003). Ponty's solution is that experiences are 'immanent' (or inherent) and that perception of an object is also a perception of all other perceptions about that object (ibid). A phenomenologist accepts the world to be socially constructed (intersubjective) and subjective, the observer as inseparable from the observed, and what is observed contingent upon human interest (Easterby-Smith et al., 1995). Several variants of phenomenological approaches have been identified such as, Habermas's interpretive sociology, Lincoln and Guba's social constructionism, Taylor and Bodgan's qualitative methodology, and Reason and Rowan's 'new paradigm' inquiry (ibid).

The phenomenological approach adopts a belief in a subjective reality and a nominally ontological view of the world, assuming that what we take to be external, social and natural is merely a creation of our consciousness and cognition (Johnson and Duberley, 2006). Philosophically this type of research accepts Kant's criticism of the Cartesian dualism (ibid) and adopts an anti-positive epistemology (Morgan, 1980), abandoning the pursuit of objectivity in favor of greater understanding. However, phenomenology has been accused of producing work that can be unclear, less precise, lacking in rigor or credibility than the positivist approach; a belief resting on the assumption that phenomenological research is prone to distortions due to the values and purpose of the researcher (Easterby-Smith et al., 1995).

3.5.3 The Middle Ground

Both approaches discussed above have a firm grounding in theory and have strong track records supported by continued research and academic debate. However, there is a growing interest in philosophical positions that approach a middle ground (Easterby-Smith et al., 1995, Miles and Huberman, 1994, Johnson and Duberley, 2006), allowing for a mixing of methodologies and methods; stemming from the Duhem-Quine thesis and Howe's 'compatibility' thesis.

Johnson and Duberly (2006) following Guba and Lincoln (1994) categorize research philosophies into three types based on the combination of their ontological and epistemological foundations (similar to Guba and Lincoln, 1994). Positivism and Phenomenology are considered pure philosophies in that they both have unitary ontologies and epistemologies. However, Critical Realism is identified as a middle ground philosophy that is ontologically objectivist and epistemologically subjectivist; and possesses elements of both positivism and constructivism (Healy and Perry, 2000). The combination of a subjectivist ontology and objectivist epistemology is not considered by both Guba and Lincoln (ibid) and Johnson and Duberly (2006). Figure 3.1, exhibits the placement of the three categories of philosophical positions in relation to their ontological and epistemological stances.

The various philosophical paradigms overlap significantly, rather than viewing them as distinct it is perhaps more useful to envision them as forming a part of a continuum. This continuum is exhibited in bold characters within Figure 3.1, with

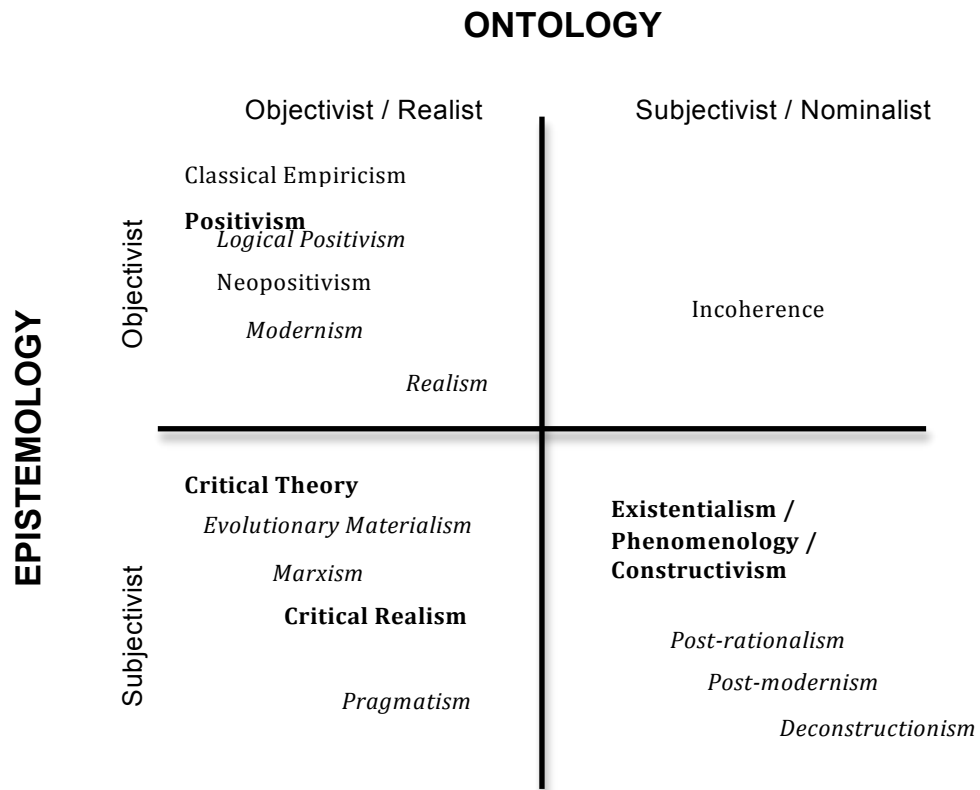


Figure 3.1: Aligning Ontologies and Epistemologies, adapted from Johnson & Duberley (2006) and Burrell & Morgan (1979)

associated philosophies under each paradigm presented in italics. Next I elaborate on Critical Realism in more detail.

Critical Realism

Critical Realism (CR) is based on the belief that the real world exists independent of our conceptualizations (Moser, 1999). CR, when applied to the study of human interactions, recognizes the importance of understanding people's socially constructed interpretations and meanings, or subjective reality, within the context of seeking to understand broader social forces, structures or processes that influence, and perhaps constrain, the nature of people's views and behaviors (Bhasker, 2008).

The emergence of CR is based on the criticism of positivism's lack of attention to the social nature of knowledge, underlying frameworks of power, and the meaning centered nature of humans (Moser, 1999). CR amalgamates a number of philosophical commitments (Johnson and Duberley, 2006), these are : an emphasis on a metaphysical ontology; a belief in a transitive reality; an acceptance of the role of human agency; a belief that science is a social activity that is in a continuing

process of transformation; an acceptance of the insufficiency of positivism alone to have any impact on the scientific process; and the identification of causation through the deployment of ‘retroductive’ arguments.

Socialization of science and transitivity of reality are predominant features of the critical realist thought, hence social structures and the protagonist role of actors in reenacting them are principal. Literature identifies critical realism as a philosophy grounded in Marxist persuasions (Bidet and Kouvelakis, 2001, Bhaskar and Callinicos, 2003) that are implemented and realized by individuals making decisions in local contexts. The integral role of a human actor in a social structure is clarified by Bhaskar’s ‘reification error’ argument, where he states ‘*society does not exist independently of human agency... The social world is reproduced and transformed in daily life*’ (Bhaskar, 1989). Here the human agent, or in William James’ (1894) words the knower is an active participant in reality creation and perception. In other words, the human-agent is simultaneously an actor and coefficient of the truth on the one side, whilst on the other he [*sic*] registers the truth which he [*sic*] helps to create (ibid).

CR like James’ formulations does not challenge the notion that there exists a world independent of the observer. Concern is focused on how the knower is involved in the process of knowing and creating social structures, and on how this involvement may somehow be expressed – a feat previously thought impossible by Hume but one critical realists suggest is possible through *retroductive arguments* (Johnson and Duberley, 2006), here *retroduction* is used as a label for the systematic processes leading to discovery.

Finding the Middle Ground

Kant repeatedly reminds us that we can know things as they appear to us, not as they are in themselves. Rorty and Putnam agree with Kant, they consider the notion of how things really are as unintelligible (Moser, 1999). CR allows us access to the Phenomenal World through gradual explorations and detailed conceptualizations that are achieved through the use of retroductive explorations i.e. through a ‘... mode of inference in which events are explained by postulating (and identifying) mechanisms which are capable of producing them...’ Sayer (1992).

A CR philosophy therefore offers that middle ground allowing us to function comfortably between Kant's Scylla of the 'phenomenal' and the Charybdis of his 'noumenal' words. The process of a critical realist gaining access to Kant's Phenomenal World is presented in Figure 3.2 that makes apparent the role of Positivism and Constructivism as two complementary epistemologies working together to help us to decipher the complexity of reality and in assigning to it some meaning. Popper's Three Worlds Theory (Gorton, 2006) (W1 through W3) is invoked to make further sense of Kant's Noumenal and Phenomenal Worlds and how the human agent functioning within the Phenomenal World makes sense and attribute meaning to his surroundings. Popper's Three Worlds are W1: Physical reality, W2: Subjective reality and W3: Objective cultural knowledge. A problem that exists is the latent attribution of the 'rationality assumption' of W2, an assumption that may not always hold, as irrationalities such as weakness of will, wishful thinking, and sour grapes effects are common inanities of the human-agent (cf. Gorton, 2006). Nevertheless the middle ground is achieved in that the human-agent is simultaneously acting in both subjective and objective realities. The objective therefore, as Gorton (2006) puts it, is not to strive to generate universal theories, but to untangle the complex web of human interactions that produces unintended and often unwanted, social phenomena; a position with which Popper and Bhaskar would both certainly agree.

3.6 Philosophy of the Research Study

Pragmatic and reductionist concerns urge that a research study adopts a particular epistemology and ontology, however, the nature of reality in which projects are enacted and the type of research questions being asked at times require that one perspective cannot be ignored in favor of another. As the research question asked in this study require explorations that are both positivistic and phenomenological at the same time, therefore, founding on the discussion provided in Section 3.5.3 a CR stance is adopted. Ontologically therefore, this research holds an objectivist view of reality i.e. having a firm belief that reality is knowable, although only approximately because of the intractability of phenomena and flawed human intellect (Guba and Lincoln, 1994). Whereas, the epistemological focus is subjectivist i.e. accepting the transitivity of the actors perception of reality. The role of human agency features as

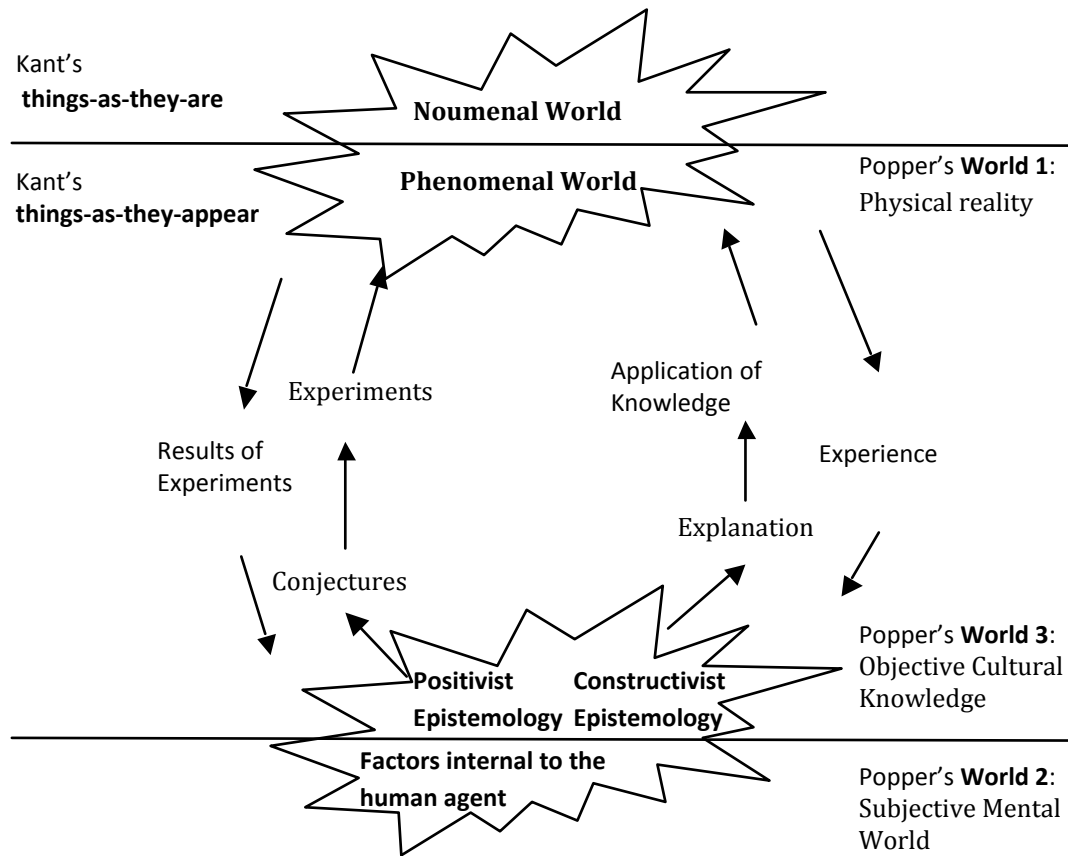


Figure 3.2: Accessing the phenomenal, adapted from Collier (1994) and Johnson and Duberley (2006)

a dominant concern, for conflicts and negotiations are activities exclusive to human actors.

This research accepts the fact that there can be multiple interpretations of a single reality and that it is through appreciating and understanding these multiple interpretations that we can get closer to knowing the actual. Axiologically this research is value-free and unbiased i.e. the researcher is separate from that which is observed. This is a peculiar position to take for a study that is epistemologically subjectivist, Guba and Lincoln (1994) termed such an epistemology as *modified dualist/objectivist* where the pursuit of dualism is abandoned as unmanageable, they clarify that objectivity in such a case is a 'regulatory ideal' that we strive towards through the critical process and acting as our own 'guardian' of objectivity.

3.7 Discussion on Methodology

A methodology is defined as a general approach to studying research topics (Silverman, 2008). Most methodologies can be classified as being either quantitative or

qualitative however, these are simply blanket terms for actual methodologies such as action research, case study, survey, experiment, grounded theory etc.

Most literature fails to differentiate between methods and methodologies, where the former refers to a specific technique of data acquisition that take on specific meaning according to the methodology in which they are used (Silverman, 2008) and the latter to a general approach taken in a study. In deciding upon the methodology for this research study I refer to Guba and Lincoln (1994) according to whom available methodologies for the post-positivist critical realists are: *modified experimental/manipulative*, *hypothesis testing*, and *critical multiplism*. As identified in section 3.6 the philosophical paradigm of this research is critical realism, therefore our choice of methodology(s) too gravitates around the options proposed by Guba and Lincoln (ibid). At a lower level of abstraction, the research methodologies that fit each option are, for the: *modified experimental/manipulative* it is action research, for *hypothesis testing* it is a survey, and that fitting *critical multiplism* is a multiple case study.

At times a single methodology is insufficient to deliver the complete answers sought in the research questions. Encouraged by Ridenour and Newman (2008) who suggest that one should envision the quantitative and qualitative methodologies as complementary rather than contradictory, for mixed methodologies leads to more holistic research. It is therefore feasible to mix methodologies together. This is possible either by using a methodology to inform a subsequent one, or by using a methodology as a sub-methodology within the bounds of another. The mixing of methodologies within this research project is realizable at two different points. Firstly, the overlap between the objectivist ontology and subjectivist epistemology provides the first occurrence where mixing of methodologies may be realized. Here, it is possible to merge the positivistic methodology with the constructivist; where, the latter may be leveraged to provide clarity and/or detail to the former, rather than both being used in exclusivity (Silverman, 2008, Guba & Lincoln, 1994). Secondly, the constructivist enquiry driven by the research questions provides an additional opportunity to mix additional phenomenological methodologies together for the purpose of *methodological triangulation* (Denzin, 2006).

As discussed in Section 3.6 this study adopts a critical realist philosophical stance, therefore, methodologically the concern is to subject reality to the widest possible critical examination to understand it as closely as possible (Cook and Camp-

bell, 1979). A question that arises then is which methodologies should be used to achieve the desired mix? Clearly the choice of a methodology is not a question of choosing between right or wrong methodologies, but rather one of choosing between less or more useful ones (Silverman, 2008). The usefulness of a methodology is contingent upon what is being asked and why; in the case of this study it is driven by the research objectives and questions.

As discussed in table 3.3, this study has several objectives, as a single methodology is insufficient to achieve the analytical depth desired by this research it is therefore necessary to rely on mixed methodologies. The precise nature of the methodologies and their integration is discussed further in Section 3.8.

3.8 Adopting a Methodology

This section details the precise implementation of the mixed methodologies. As identified in Section 3.7, the research methodologies fitting this research's philosophical orientation are the survey and case study. However, several factors have to be taken into consideration in choosing when to deploy a particular methodology. In discussing the choice of a methodology Yin (2003) argues that the choice is dependent on the type of research question posed, the need to control behavioral events, and the degree of focus on contemporary phenomenon. The research questions posed in this study may therefore be examined in light of Yin's (ibid) criteria to identify the most appropriate methodology needed to answer them, Table 3.4 provides an evaluation of the research questions using Yin's criteria.

Although Yin provides the structure adapted and extended in Table 3.4, there are certain assumptions that need to be verbalized. Firstly, control of behavior events refers to the actual manipulation of a contemporary situation. According to Yin (2003) a case study research does not require the researcher to control behavior events, rather it allows the researcher to study a phenomenon as it happens within a context rich setting. As this study is concerned with exploring the phenomenon of project centric conflict & negotiation from multiple perspectives, in order to come close to understanding its true nature, the concern is not with manipulating the behavior of participants. Hence, in Table 3.4, it is to be noted that none of the research questions require control over the behavior of events; therefore, I am left with a choice between survey or case study methodologies. A decision to deploy

Table 3.4: Available Methodological Choices, adapted from Yin (2003)

Research Questions	RQ Type	Requires control of behavioral events?	Focuses on contemporary phenomenon?	Focuses on contemporary events?	Available Methodological Choices
RQ1	What /How?	No	No/Yes	Yes/No	Survey & Case Study
RQ2	How/Is there?	No	No/Yes	No	Survey & Case Study
RQ3	How/How?	No	No/Yes	No	Survey & Case Study
RQ4	How/What/Why?	No	No/Yes	Yes	Survey & Case Study

the survey is based on the fourth column of the table that asks if the research question requires a focus on contemporary phenomena. In case where focus is non-contemporary phenomena the survey methodology is used, whereas the case study methodology is the choice methodology in the case of focus on contemporary phenomenon. Additional concerns pertain to the concept of a phenomenon and how it is interpreted and used; a phenomenon is something of interest that concerns the study. However, two immediate issues arise: (1) the nature of the phenomenon under study is such that it is difficult to separate it from the context in which it is being played out, and (2) when a conflict or negotiation arises within a project its consequences may not materialize until much later. Although the phenomenon under consideration is contemporary and agrees with Yin's (2003) criteria for inclusion in a case study, maintaining a sole focus on the present events comprising the phenomenon is problematic. Thus, mandating that information about recently culminated events be also taken into account.

Because of the limitations identified above the table is extended to introduce and explicate the study's focus on contemporary events, in doing so the conception of a phenomenon is reevaluated and accepted as one that is reified in the form of smaller discrete events that are either contemporary or not i.e. their consequences realized. In case of a contemporary event, focus is to understand conceptions, perceptions, and decision-making processes; while in the case of a culminated event focus is on consequences of the decisions and actions of participating actors.

Although either the survey or case study methodology may be used for an exploratory analysis of the research topic (Yin, 2003), the case study approach proves to be far superior as it is extendable to include both descriptive and explanatory analysis of an issue at hand in detail and within its environment. Hence, the case study is the primary methodology deployed within the research project. The survey research methodology is used to supplement and support the case study methodology. The precise positioning of the two methodologies may be envisioned as shown in Figure 3.3. How these methodologies interrelate, supplement the case study, and are implemented is elaborated in the subsequent section.

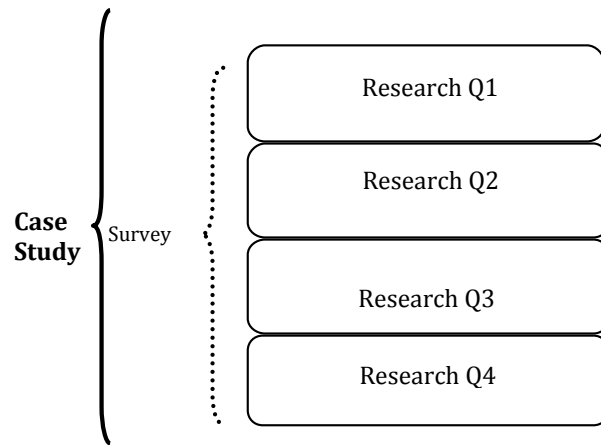


Figure 3.3: Relationship Between the Research Questions and Methodologies

3.8.1 Mixing Methodologies

This section discusses how the survey and case study methodologies come together to formulate the mixed methodology adopted for this study.

As discussed in Section 3.6 this study adheres to the CR research philosophy. A major concern taken up in this work is to develop context rich explanations and descriptions with a focus on *aggregate generalization* (Polkinghorne, 1991), also referred to *analytical generalization* (Yin, 2003), rather than on enumerating frequencies.

As a first step the survey methodology, that is informed by the review of literature, is deployed to form an interpretation of the status quo of how projects in the region where this study is implemented function in the presence of conflicts & negotiations. The survey methodology contributes by providing a foundation for each of the research questions on which later explorations follow in the form of a case study inquiry. The contribution that the survey seeks to make to each of the

research questions is further clarified in Section 3.8.2. Implementation of the survey is followed by the case study methodology that focuses on answering the *how* and *why* questions and seeks to develop explanations and descriptions of how and why the phenomenon plays out within specific project settings. This tiered implementation allows us to take a generalized look at the regional project environment through the survey and reflect against it in a localized case specific setting through the case study. Specific details of the case study methodology employed are discussed in Section 3.8.3. The two methodologies used in this study and how they inform each other may be envisioned as shown in Figure 3.4.

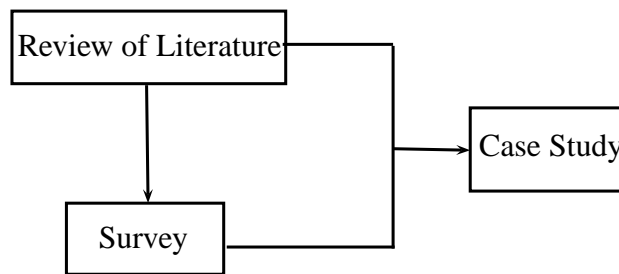


Figure 3.4: Relationship between Literature and the Adopted Methodologies

Here the review of literature contributes equally to both the survey and case study methodologies. The survey findings contribute to and inform the case study, which consequently answer this studies research questions.

3.8.2 The Survey

The survey questions used are informed by previous studies and review of literature. Through the survey I seek to achieve several objectives, for this purpose the survey combines different instruments that are administered in tandem, these are explicated next. The first objective of the survey is to assess a project's complexity, for this purpose I implement an instrument developed by Shenhar and Dvir (2007). The second objective of the survey is to revisit the work of Thamhain and Wilemon (1975), this allows us to explore whether conflicts similar or different from those found by Thamhain and Wilemon (ibid) and others discussed in the literature exist within the geographic area of our case study and to gauge their prevalence during the various phases of the project lifecycle. The third objective of the survey is to identify the drivers of negotiations within projects. The fourth objective of the survey is to determine if project teams experiencing conflicts & negotiations behave differently

than those not experiencing conflicts & negotiations and how this behavior differs and whether there is a pattern to this behavior. The fifth objective is to explore the role of culture within project conflict & negotiation. The last objective of the survey is to explore the different conflict management and negotiation strategies used within projects and to determine if these are premeditated or reactionary.

This survey will be distributed locally to project practitioners using a simple random sampling method for soliciting responses. Furthermore, an abridged version of the survey under discussion will be administered prior to the start of the in-depth interviews comprising the case study, with the objective of gathering project specific information and setting the direction of the interview. The use of such a survey (or structured interview) preceding the actual interview is endorsed by Miller and Glassner (2004), where they used a similar survey to gather a range of information about the subjects and followed through with in-depth interviews to identify the roles and activities of the subjects. The survey results when compiled shall further inform the strategy for the second part of the data collection effort i.e. the case study. The case study is discussed in more detail in the next section.

3.8.3 The Case Study

Several types of case studies have been identified (see Datta, 1990, Feagin et al., 1991, Stake, 2000), this study is positioned with Stake's (2000) and Datta's (1990) taxonomy of a *collective/cumulative* case study as it enables me to study multiple sources to investigate a specific phenomenon. Through the use of multiple data sources I seek to maintain a replication logic rather than a sampling logic (cf. Yin, 2003, Feagin et al., 1991, Stake, 1995). As both Yin (2003) and Stake (1995) base the case study approach in the constructivist paradigm (Baxter and Jack, 2008), therefore there are no qualms in aligning it with the critical realist philosophy as both accept truth to be relative and realize a subjectivist view of knowledge creation.

3.8.4 Case Selection and Sampling

In formulating the research design the recommendations of Yin (2003) and Miles and Huberman (1994) are followed, according to whom multiple-case designs are stronger than single-case designs, therefore a multiple-case design is selected. A conscious effort is made therefore through the case selection process to select cases

of similar nature in order to facilitate cross case comparison. A review of case study nominations and of nomination procedures is recommended (Yin, 2003). Unfortunately, Yin (ibid) does not explicate about how this may be done. For this I turn to Silverman (2008) who suggests that a typology should be set up which would establish a matrix of the universe of cases under consideration. Such a typology is presented in Table 3.5.

Table 3.5: Typology of Projects

		Structural Complexity		
		High Complexity	Medium Complexity	Low Complexity
Task Conflict Intensity	High	Dam Extension Project		
		Small Dams Project		
		Dam Maintenance Project		
		Campus Construction Project		
	Medium		Vocational Education Program	
			Mining Project	
	Low			Lollywood Docudrama
				Lollywood Horror Movie
				TV Serial Production

The table above presents a classification of the projects according to the number of expected conflicts within the projects versus the projects structural complexity (i.e. number of components and the interrelationships amongst them, explained in detail in chapter 2 Section 2.8.2). Please note that the given typology is simply indicative to give a good spread of projects. The reason for choosing conflicts and complexity as the two labels is because these align well with the objective of the study. Secondly, by classifying the projects according to their level of complexity and expected conflicts data can be captured from three different sets of projects that exhibit progressively diminishing levels of complexity and conflicts. Thus, the data from the various projects can be compared and contrasted against one another. The term ‘task conflicts’ here is used as a mechanism to classify the projects by the number of non-trivial task conflicts they experience. The intensity of the conflicts (i.e. high, medium, and low task conflicts) refers to the significance of the conflicts experienced i.e. a conflict’s contribution to delays, other conflicts or negotiation activities, and overall project complexity. Disputes if any, as they involve legal recourse are considered highly consequential and included in the high task conflict category. The projects were classified into the three categories using the literature reviewed and desk research about the projects at the time of establishing contact and negotiating access. The construction projects were classified as highly complex solely based on the literature. The vocational education program and mining projects were

classified as medium complex based on the number of project team members they had and the interrelationships that existed with external contractors. The movie making projects and TV serial were classified as low complex because of the lack of existence of formal contracts on these projects, their limited budgets, and size of their project teams.

The figure above presents a classification of the projects according to the nature of the project type and source of project funding. The projects presented in Figure 3.5 are classified into three distinct categories based on the nature of the project work and classified further based on the source of the project funding. The source of funding for the project is either government or private, where the government funded projects are those that receive monies directly from the government (in the case of this research study these funds come from the Pakistan Ministry of Finance via the Planning Commission of Pakistan). While in the case of the privately funded projects the monies come from a private funder such as industry or individual. The three broad categories of projects included in the case study are construction & works, training & consulting, and arts & entertainment. Construction & works type projects are those projects that are concern with either constructing something or engage in maintenance activities. Training & consulting projects are those that deliver trainings (such as the vocational education program) or offer consulting services (such as identifying mining prospects and writing project proposals). While the Arts & entertainment projects are those that result directly in the production of artistic media developments such as televised dramas or movies.

Using a theoretically grounded purposive sampling technique, as suggested by Silverman (2008), Miles and Huberman (1994), also termed as non-probability or judgmental sampling, contact was established and permissions acquired to study the projects identified in Table 3.5. Note that generic names are used in lieu of the actual as maintaining project and interviewee anonymity does not detract the study in any manner. The logic behind using a purposive sampling technique is to find replications (*ibid*) and to illustrate subgroups and facilitate comparisons (Miles and Huberman, 1994). Therefore the selected projects are such that cross-case comparisons are possible.

The choice between an embedded and a holistic study that is based on either a single case or a multiple case design is a difficult one (Yin, 2003), each possessing its own set of issues and problems that must be dealt with. However, Yin (*ibid*)

encourages us to opt for a multiple-case design when the choice and resources are available. To understand why the multiple-case design is preferred there is a need to first examine the rationales steering the choice of a single case design. According to Yin (ibid) the single case design is justified when the case (a) represents a critical test of existing theory, (b) a rare or unique circumstance, or (c) a representative or typical case, or when the case serves a (d) revelatory or (e) longitudinal purpose. However, Yin (ibid) is quick to point out that the same rational cannot be applied to the multiple case design. He elaborates that by definition unusual or rare cases, a critical case, and a revelatory case will likely involve a single case design. Therefore, a multiple case design is justified when examining representative or typical cases or when the study serves a longitudinal purpose. A conscious effort has been made to select projects of similar scope and nature, for this study the two broad categories are those resulting in a physical product and those resulting in some sort of a service. Such a mix of cases is endorsed by Stake (2000) who terms this a *collective case study*. All civil works and maintenance projects included in our study are from the government sector, whereas the movie projects are all performed by private entities. Background details pertaining to each case included in the case study will be provided in the case study data analysis, which is discussed in chapter 6.

3.8.5 Case Study Protocol

Yin (2003) recommends the use of a case study protocol as part of a carefully designed research project. As this research study uses a mixed methodology, elements of the case study protocol and where they are discussed is provided in Table 3.6.

As each element of the case study protocol is discussed individually where identified, the protocol will not be expanded on the protocol here, rather the table provided serves the purpose of identifying where the elements of the protocol are to be found.

3.8.6 Case Study Design

The case study research design is the logical sequence that connects the empirical data to the research questions and eventually to the conclusions to be drawn (Yin, 2003). Five elements of a research design have been identified, these are: the research question(s), propositions, unit of analysis, logical link between the data and

Table 3.6: Case Study Protocol and Associated Section

Components	What is discussed?	Where discussed
Overview of the case study project	Project objectives, research questions, underlying logic in selecting a case study methodology, case selection, and empirical plan	Chapters 3 and 4
Field Procedures	Credentials and access to site	Appendix
Case study questions	Specific questions that the investigator will keep in mind while conducting case study interviews	Appendix
Guide for the case study report	Outline and format for the narrative	Chapter 6

proposition, and criteria for interpreting findings (ibid). Aside from the research questions and unit of analysis, I find that the remaining components of Yin's case study design are better suited for a discussion relating to the empirical plan of this research study, hence these are discussed in more detail in Chapter 4. the research questions have already been identified in Section 3.3. The unit of analysis is discussed below.

Unit of Analysis

Through the use of the case study I am seeking to holistically understand the interrelated activities engaged in by the actors in a social situation (in this case a project), a task endorsed by Feagin et al. (1991). However, Stake (1995) cautions that case studies must have boundaries. When choosing a case for study encouragement is offered to get away from a statistical sampling logic (see Feagin et al., 1991, Stake, 1995, Yin, 2003) and select cases that possess the factors that one wishes to study (Denzin, 2006, Silverman, 2008) i.e. through the use of purposive sampling. The categories of case study hinted at by Silverman (2008) is what Yin (2003) has termed a 'unit of analysis' according to Yin (ibid) is the 'case' under investigation or in the words of Miles and Huberman (1994) a 'phenomenon of some sort occurring in a bounded context'.

The unit of analysis for this study is 'the project' and the concern of this study is to understand the role of conflict & negotiation in the complexity of projects. However, it is interesting to note that a unit case (or single case) is not feasible

and is generally discouraged, as no meaning resides in a single unit (Silverman, 2008). Similarly, Yin (2003) also argues in favor of a multi-case design. Therefore defining multiple units (or multiple cases) and how they relate to each other is necessary (Silverman, 2008). In this study these multiple units are the various types of projects comprising the categorization discussed in Section 3.8.4.

3.9 Ethical Concerns

Ethical concerns pertaining to this study were clarified and clearance was sought and obtained from an ethics review committee of the University of Southampton. As per the case put forward to the ethics committee it was agreed that neither the cases included in the study nor the respondents will be named directly in this report, as identifying them contributes in no way to our discussion or conclusions.

3.10 Theory Building

As discussed in Section 3.6, this study adopts Critical Realism as its philosophy, therefore a compatible theory is needed to discuss the findings of the study. The choice of using an existing theory during the discussion is followed as it allows us to reflect against the data from an existing theoretical perspective. Instances where the theory is mute are used as points of departure during the section on general discussion and contribute further in extending our understanding of the data.

Although there are several critical social theories that exist, this study adopts Habermas' (1984) Theory of Communicative Action (TCA) as because of its focus on resolving conflicts through a process of discourse between the parties involved fits most closely with our topic of interest. How the TCA will be put into action is discussed in more detail in Chapter 4.

3.11 Conclusion

This chapter has presented a discussion linking the philosophy and methodology of the study. Building on the discussion presented above, the next chapter presents the empirical plan.

Chapter 4

Empirical Plan

4.1 Introduction

The empirical plan presented in this section puts into practice the proposed methodology outlined in Chapter 3 that describing the mechanism used in this study linking the research questions to the empirical evidence needed to answer them. Following the recommendation of Miles & Huberman (1994) a ‘tight design’ is presented, as it provides ‘clarity and focus’ during the data collection process and prevents ‘diffuseness and overload’.

This chapter is structured so that Section 4.2 elaborates on the empirical plan and discusses the various components comprising the research design that when used enable us to answer the research questions. Section 4.3 provides contextual details on the geographical region where this study is implemented and why it was chosen. Sections 4.4 and 4.5 discuss the survey methodology employed by this study and clarify the precise mechanism through which it will be implemented, Section 4.7 through Section 4.13.2 discusses the empirical plan underlying the case study methodology, and Section 4.14 presents a discussion on Habermas’ (1984) Theory of Communicative Action (TCA) and how it is used by this study.

4.2 Orientating the Empirical Plan

Chapter 3 sections 3.2 & 3.3 discussed the research objectives & questions for this study and presented the methodological choices available based on the nature of the research questions asked and philosophical orientation of the research study.

Table 4.1: From Research Objectives to the Data Collection Instruments

Research Questions (RQ)	Methodology Employed to Answer the RQs	Methods for Data Collection	Nature of the Data Collection Instruments
Primary RQ: Do conflicts and negotiations make a project complex, or is it that projects that are already complex have more conflicts and negotiations? Mixed Methodologies	Answers to RQ1 through RQ4 will answer this question		
RQ1: What drives project conflicts & negotiations and how?	Survey Case Study	Questionnaire, Interview, Documents & records Observations	Open-ended Semi-structured Formal documents Direct/Indirect
RQ2: How do projects behave in the presence of conflict and negotiated actions? Is there a pattern to this behavior?	Survey Case Study	Questionnaire Interview Documents & records	Open-ended Semi-structured Formal documents
RQ 3: Does a project having a heterogeneous cultural makeup experience conflict differently than a project with a homogeneous cultural makeup, and if so how?	Survey Case Study	Questionnaire Interview Observations	Open-ended Semi-structured Direct/Indirect
RQ4: How does a project team working in a project experiencing conflicts manage the conflicts? What negotiation tactics do they use, when do they use them, and why?	Survey Case Study	Questionnaire Interview Documents & records Observations	Open-ended Semi-structured Formal documents Direct/Indirect

Table 4.1 is an adaptation of tables 3.3 and 3.4, the table links the research questions to the data collection instruments that will be deployed to collect the empirical evidence to answer them. The relationship between the research questions and methods, presented in Table 4.1, can be visualized as shown in Figure 4.1.

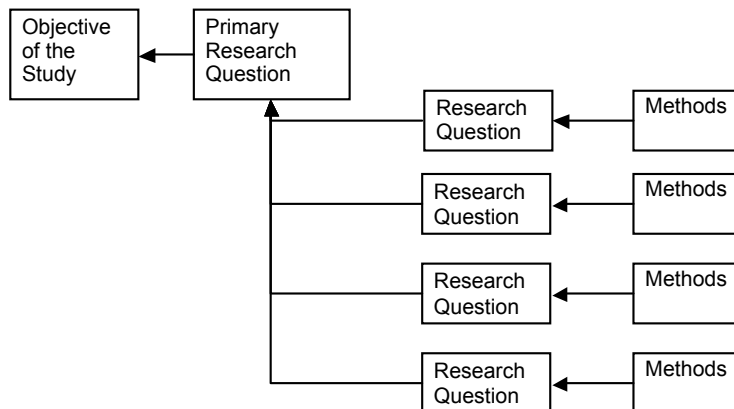


Figure 4.1: Relationship between Methods, Research Questions, and Research Objectives

In this chapter I discuss each research question and explicate the underlying methods and how they will be used to collect the data. First I examine the role of

the survey and explicate how it helps achieve the study objectives (see Section 4.4). Purpose of the survey and how it contributes to the case study methodology of this research has already been discussed in section 3.8.2. However, for the sake of continuity I would like to reiterate that this study follows a descriptive survey design, which is sufficient and useful for counting or measuring the prevalence of phenomena but insufficient for determining relationships (Oppenheim, 2001). As this study is concerned with exploring the phenomenon within a given context and specific types of projects the survey results are used to inform the case study. The relationships between variables and why or how they contribute to the phenomenon will be investigated in more detail using the selected methods as a part of the case study inquiry; this is elaborated in more detail in Section 4.7.

The primary research question for this study is such that it cannot be answered directly without first answering the research sub-questions. I therefore continue this discussion from the vantage of the research sub-questions and discuss the role of the survey and case study in relation to each. Role of the survey and case study in direct relation to the primary research question is undefined and will therefore not be discussed.

I begin the discussion by examining the specific contributions of the survey to each research question.

4.3 Region of Study Implementation

This section provides a brief discussion on the geographical region where this study was situated and also outlines the reasons behind its selection.

This study was implemented in the North-West region of Pakistan because it offered convenience and ease of access to data sources. This is because this researcher while enrolled in the split-site Ph.D. program resided in the city of Peshawar and had several personal and professional contacts in the region who facilitated in negotiating access to the various projects. Next a brief discussion aimed at providing contextual background on the region is provided.

The province of Khyber Pakhtunkhwa (KP) (previously named the North-West Frontier Province (NWFP)) is located in the North-West of Pakistan. KP consists of 25 districts (including 5 classified as Provincially Administered Tribal Areas), 7 Federally Administered Tribal Agencies (FATA) and 6 Frontier Regions (FR).

Governance within the 25 districts is according to the national and provincial laws, whereas the FATA/FR are governed under the Frontier Crimes Regulation (FCR). The FCR are a specific set of laws that only apply to the inhabitants of the FATA agencies and are implemented through a representative of the government called a Political Agent (PA). Some of the projects included in this study i.e. the small dams project, dam maintenance project, mining project, and vocational education program are such that their project management staff and offices are in the city of Peshawar but the project worksites are located in the FATA/FR areas, therefore these projects have to abide by the two set of laws. All negotiations between the tribes living in the FATA/FR regions and the PA are through the process of a 'jirga' (lt. gathering of elders) where the tribal elders representing the tribes negotiate on its behalf. Care was taken in this study to include projects from both the tribal and non-tribal areas to capture the perspective of both type of projects.

During the data collection process it was not possible to visit all the project sites because of security risks arising from the presence of the talibans in the region. Because of safety and security concerns, project sites of the small dams project, vocational education program, and mining project were not visited. However, I did visit their project offices, which are located within the city of Peshawar, multiple times. Project sites of all other projects included in the study were visited at least once.

Details on how the projects were selected and access was negotiated are provided in more detail in Section 4.13.

4.4 Survey

As described before in Chapter 3 the survey is used as a tool for aggregation rather than generalization, therefore the premise is that rather than seeking out prevalence of predefined variables, through the use a purposive sample this study is more interested in finding out what exists out there in the field. Oppenheim (2001) terms this a descriptive survey design where the objective is to find facts and describe a phenomenon, compared to an analytical design where the aim is to generalize and seek out relationships.

The data collection method for a survey is a questionnaire, which may take one of two forms, structured or unstructured and the questions asked may be close-

ended or open-ended (Oppenheim, 2001). In this chapter any reference to a survey is to the structured type only, where the questions asked are in a given order or sequence and open-ended questions because the intent of the study is to explore the phenomenon, as it exists out there in the world, and to influence it as little as possible. There are several pros and cons of each questioning strategy, however, the close-ended questions are more representative of an analytical survey design and are too restrictive in a study following a descriptive design. Thus an issue with following a strategy of using close-ended questions is that only those variables that the researcher perceives important are enquired into and the opportunity to capture the respondents views is ignored. Additionally, in using a close-ended questioning strategy the responses provided may suffer from passivity (Oppenheim, 2001, Groves et al., 2004) i.e. participants making the minimum effort required to fill the questionnaire. Arguably, passivity may prevail in a survey containing open-ended questions as well; however, in our case it is reduced by administering the survey in the form of a structured interview. Indubitably this translates into higher monetary costs and greater effort during data collection, however, these are offset by a better response rate and reduced passivity. Certainly, we are not precluded from implementing the survey in a self-administered manner such as through postal mail, email, or Web based methods to respondents that reside outside of convenient reach. Thus, I resort to implementing the survey as a structured interview where possible and opt for a self-administered implementation using mail, email, and web based options where requested or necessitated. The study is indifferent to a mailed, emailed, or web based administration as Kaplowitz et al. (2004) have shown that they have similar response rates; however, respondent preference for a particular method of survey delivery is certainly taken into consideration.

Although there has been some criticism of the open-ended questioning strategy that focuses on the variety of ways that an open-ended question may be interpreted and therefore argues that the answers generated may not be comparable (Oppenheim, 2001). However, this criticism is not valid in our case as the descriptive survey design is amenable to a diversity of answers and the possibility of the distinct interpretations offered by each participant only enrich the results. Additionally, the prospect of receiving a diversity of answers in response to survey questions means that the case study investigation will have a sufficient spectrum of answers to reflect against and inquire into in more detail.

I will now examine each research question in detail and evaluate the feasibility of the three type of questioning strategies.

4.4.1 Role of Survey in Research Question 1

What drives project conflicts & negotiations and how?

This research question is a composition of two questions; these may be phrased separately as:

1a: What drives project conflicts & negotiations?

1b: How do these drivers drive project conflict & negotiations?

Each of the above questions is distinct and one method of questioning may not be sufficient in finding an answer. I will examine each in detail and explore the viability of using a survey questionnaire for data collection.

Question 1a, seeks a description of the drivers of project conflicts & negotiations. This question may be asked in two ways through the use of a structured question such as: By presenting the participants with a predefined list of drivers and asking them to rank order them by priority (close-ended question); or alternatively, by asking them the question in the form of an open-ended question, where each participant will name their own top five drivers and then rank order them. The reason for inquiring into the top five conflict drivers is that it aligns well with Thamhain and Wilemons (1975) study that too focused on only the top five conflicts within projects.

Because the objective of this study is to gain a holistic understanding of the phenomenon I would like to allow those surveyed to provide me with a list of variables they feel are important in their project environment. Therefore, this study follows the latter of the two options discussed above, i.e. ask the question in the manner of two sets of open-ended questions (one for conflict and one for negotiations) and ask the participants to name the top five drivers for each in their project and to rank order them from most important to the least important. These factors can then be explored in greater detail using the case study methodology.

The second part of the research question, question 1b, is a relational question and the answer sought is not possible through a descriptive survey design. Therefore, it is favorable to seek an alternative method to find an answer to this question. I will discuss question 1b in more detail in Section 4.7 pertaining to the role of the case study methodology in this studies research questions.

4.4.2 Role of Survey in Research Question 2

How do projects behave in the presence of conflict and negotiated action? Is there a pattern to this behavior?

The second research question is a combination of two questions these can be posed separately as:

2a: How do projects behave in the presence of conflict and negotiated action?

2b: Is there a pattern to how projects behave in the presence of conflict and negotiated action?

Both questions 2a & 2b are relational type questions. Question 2a, builds upon the drivers of conflict & negotiation identified by the respondents in question 1a. However, now the concern of the research question is the personification of the presence of conflicts and negotiations. Question 2a therefore asks the respondents to reflect and respond with how their project behaves in the presence of conflicts & negotiations. The respondents are asked two strands of questions, one pertaining to conflicts and the other to negotiations. The reason for using an open-ended question has already been discussed in the justification provided for research question 1a.

Question 2b, is best asked in the form of an open-ended question. Doing so enables the respondents to express their complete thoughts when formulating a response. However, the respondents may, in order to complete the questionnaire in an agreeable length of time, sacrifice completeness for brevity. Thus, the answers received may offer a clue into the nature of the pattern or they may be completely unintelligible. Hence, I feel this question will require further inquiry using an alternative method; question 2b is revisited in Section 4.7.

4.4.3 Role of Survey in Research Question 3

Does a project having a heterogeneous cultural makeup experience conflict differently than a project with a homogenous cultural makeup and if so how?

This research question is a combination of two questions. These are phrased as follows:

3a: Does a project having a heterogeneous cultural makeup experience conflict differently than a project with a homogenous cultural makeup?

3b: How does a project having a heterogeneous cultural makeup experience conflict differently than a project with a homogenous cultural makeup?

Although question 3a is a descriptive question, it could simply be answered with a yes or no response based on the reflections of the participant against their universe of experiences. However, asking the question directly would hinder us from exploring the issue further and finding the details that question 3b seeks to unravel. Alternatively question 3a could be answered by comparing the answers to question 3b, which is described in more detail below.

Question 3b is a relational question; however I am using the answer to this question to formulate a reply to both questions 3a and 3b. The first task in finding an answer is to determine if the project team that the participant has in mind when answering the question is culturally homogenous or heterogeneous; once the nature of the project team is determined the second task is then to explore how the project team handles the conflict. The question is posed in the form of an open-ended question, where the participants are asked to provide a list of how their project team behaves when experiencing a conflict; this question can be answered using an ordinal list. An analysis of the answers will allow us to determine if culturally identical project teams are experiencing the conflicts similarly and to further determine if there are any patterns in the way that teams experience conflicts. Respondents experiences in a situation of conflict are then investigated further in the form of a ‘why’ question using an alternative method for greater understanding of the phenomenon.

4.4.4 Role of Survey in Research Question 4

How does a project team working in a project experiencing conflict manage the conflict? What negotiation tactics do they use, when do they use them, and why?

This research question is a composition of different types of questions. These may be posed individually as:

4a: How does a project team working in a project experiencing conflict manage the conflict?

4b: What negotiation tactics does the team use?

4c: When do they use these particular negotiation techniques?

4d: Why do they use these particular negotiation techniques?

Question 4a is a relational question and seeks to determine how the project team manages a situation of conflict. The focus here is on the actions of the project team that they take to reduce the effects of the conflict primarily at a pre-negotiation stage. This question is asked in the form of an open-ended question where the participants are asked to provide an ordinal list of measures that they take during their project to manage conflict.

Question 4b is a descriptive question and builds on the findings from question 4a and turns its focus to the negotiation phase. This question asks what negotiation techniques are used by the project team experiencing a conflict. As there are only a handful of commonly known negotiation strategies I will use a close-ended question to investigate which of the strategies are being used. The close-ended question have the 'other' option available for participants to add additional strategies if they desire.

Question 4c is a relational question and is concerned with finding when each negotiation technique is used. The answer to this research question will be collected from the perspective of responses to particular types of conflicts. Since this question would be difficult to answer directly through the survey I will use alternative methods to find its answer.

Question 4d is a relational question and may partially be answered using the survey method. One of the reasons a particular conflict management technique may be in use is because there may be a predefined strategy that the project organization is following. If that is the case then one of the first points of interest for this inquiry is to determine whether such a strategy exists. This is easily asked through the use of a 'yes' or 'no' question in a survey. If a conflict management strategy is found then the next step is to ask the respondents about the nature of the strategy, this may be accomplished through the use of an open ended question asking the respondents to explain the strategy they are using. If it is indicated in the survey that is no conflict management strategy exists then the study is interested in knowing how the team members decide on which negotiation techniques to use.

4.5 Survey Questions

Based on the discussion in section 4.3 a survey questionnaire consisting of 34 questions was developed. Survey questions 1 – 10 are adapted from Shenhar and Dvir (2007), questions 11 – 16 inquire into the profile of the project (such as number of people involved, percentage of work contracted out, budget of the project, etc.), where as questions 17 – 33 pertain to the discussion in Section 4.4, while question 34 allows the respondent to provide any other information they may feel the questionnaire has missed. Table 4.2 clarifies the relationship between the research questions of the study and the survey questions asked. The survey instrument is provided in Appendix B.

Table 4.2: Aligning the Research Sub-Questions with the Questions Asked in the Survey

Research Sub-Questions	Decomposition of Research Sub-Questions	Questions in the Questionnaire Pertaining to Each Research Sub-Questions
RQ1	1a: What drives project conflicts & negotiations? 1b: How do these drivers drive project conflict & negotiations?	Q: 17, 18, and 19
RQ 2	2a: How do projects behave in the presence of conflict and negotiated action? 2b: Is there a pattern to how project behave in the presence of conflict and negotiated action?	Q: 20, 21, and 22 Q: 23 and 24
RQ 3	3a: Does a project having a heterogeneous cultural makeup experience conflict differently than a project with a homogenous cultural makeup? 3b: How does a project having a heterogeneous cultural makeup experience conflict differently than a project with a homogenous cultural makeup?	Q: 25, 26, 27, and 28 Q: 25, 26, 27, and 28
RQ 4:	4a: How does a project team working in a project experiencing conflict manage the conflict? 4b: What negotiation tactics does the team use? 4c: When do they use these particular negotiation techniques? 4d: Why do they use these particular negotiation techniques?	Q: 29 Q: 30 Q 31, 32, 33 Q 31, 32, 33

4.6 Interpreting the Survey Results

This section discusses how the survey results will be aggregated in a manner that the end result produced is a robust categorization of the answers received, for both the open-ended and ordinal list questions asked in the questionnaire. As the questions asked in the survey are open-ended it is expected that a variety of answers will be received in response to a question and that several of these answers may only differ syntactically but will semantically be the same. Therefore a method to combine similar answers into a single response that is the most representative answer for a particular category needs to be defined.

In thinking about the types of answers to the open-ended questions it becomes clear that a desirable method for this process is one that will allow for an inductive categorization of the answers thereby reducing the sheer variety of the answers. As I am dealing with text data therefore to find a solution I turn to content analysis and look specifically at text-analysis methods for open-ended questionnaires. I examine three such methods, before choosing a method for aggregating the answers to our survey, these are: Code based analysis, word based analysis, and concept mapping (a blend of word and code based analysis).

The first method comes from conventional content analysis and is described as a code based approach to content analysis. This method is used to create summary categories or themes for the purpose of making inferences (Krippendorff, 1980), this method is useful for dense interview transcript type data where recurring themes or metaphors may be identified (Jackson and Trochim, 2002). As the data in the survey is sparse compared to that found in an interview transcript therefore this technique is not favorable. Additionally, the use of researcher-driven classification schemes or codes is problematic as I am interested in keeping any categorizations as close as possible to the original material and want the categories to emerge from the data.

The second method is word based analysis, which can be used with dense and sparse text and allows categories to emerge from the questionnaire responses (Jackson and Trochim, 2002). The robustness of this technique has been discussed by several authors, e.g. (Ryan and Bernard, 2000). The word based analysis method uses words (from the responses of the participants) for categorization and captures relationships between concepts and allows structures in the data to emerge based

on co-occurrences of words or relational similarities, and are able to capture relationships that code based methods cannot (Jackson and Trochim, 2002).

The third method is concept mapping, which proposes to be an amalgamation of the word and code based approaches (Jackson and Trochim, 2002). However the mechanism for implementing this technique as explained by the authors and the resources it requires are such that the use of this technique will be difficult within the time limitations of this study and it will inconvenience the respondents. Any gains from using the concept mapping technique are therefore overshadowed by the equivalently useful, easy to use, and well-used word based analysis.

In order to reduce researcher influence during this process, I use an automated lexical analysis system for content analysis called Leximancer. For a discussion on the validity of the results produced by Leximancer and for a complete overview of how Leximancer works see Smith and Humphreys (2006). The role of Leximancer in interpreting the survey data is explained in Sections 4.6.1 and 4.6.1.

4.6.1 Procedure for Aggregating Ordinal List Answers

As identified above I will be using a word based analysis technique. Therefore, the procedure begins with individual words as a unit of analysis. During the process of producing lexical maps syntactically similar words will be combined together first followed by an aggregation of those that are semantically alike, following a thesaurus based search mechanism performed using Leximancer. The nodes of the lexical map represent the words and the size of the bubble encircling each word represents the frequency of their use in the data. Leximancer performs an iterative process of creating lexical maps, where each iteration representing a cycle of aggregating similar words and identifying candidates for the next iteration. Next I describe the method used by Leximancer for developing the lexical maps.

Leximancer works line by line for each of the five answers received in response to an ordinal list type question, moving in a descending order from the most important/frequent/likely category to the least important/frequent/likely category. All the answers to a category are first combined together then all the syntactically similar answers are counted and combined together. In the next iteration the remaining answers are examined closely to determine any that are semantically similar. These will be included in the categories that were formed in the previous step and the

number constituting each category tallied. In the third step, the remaining answers will be looked at to determine if it may be possible to form any broader categories. These categories are then used to compact the variability within the data further, the number of answers assigned to the newly formed categories (based on semantic and syntactic similarities) are counted and combined. Any words remaining after this step are not processed any further and are not categorized.

4.6.2 Procedure for Aggregating Open-Ended Answers

In this section I discuss how the answers to the open-ended narrative questions are synthesized. As the nature of the open-ended questions is such that I expect a variety of answers to the same question, therefore a mechanism is required that will allow me to deal with the variability in the answers. The same method as identified for the ordinal list type questions in section 4.5.1 will be used for aggregating open-ended narrative questions as well. The only difference during the aggregation process is that the answers received from the respondents will be more verbose than those received for the list type questions. Because of the verbosity of the answers and the ambiguity inherent in natural languages some of the answers may be open to interpretation in several different ways. In case that an answer is found to be of a type that may be interpreted in multiple ways it will be counted as contributing to a word category that it represents more closely. This is achieved through an inbuilt feature in Leximancer, which offers the ability to view the results in the form of various levels of abstraction of the lexical maps.

Because of the region within Pakistan where this study will be implemented I anticipate receiving a few answers written in the local languages (i.e. Urdu and Pashto), these will be translated into English at the time of data entry. As this researcher is a native speaker of the regional languages therefore all translations are expected to be as close in intent to the original statement as possible. If a word is found that has no direct alternative available in English, it will be assigned to the word category it most closely represents.

4.7 Case Study

There are several methods available for data collection through the case study methodology, such as: Observations, interviews, documents, and audiovisual material (Creswell, 2007). In the following section I discuss how these methods will be used to gather the data necessary for answering the research questions of this study. I will now examine the role of the case study methods in each question.

As discussed in Section 4.2 all the research questions in this study are either descriptive or relational in nature. The descriptive questions are better suited to be answered using the survey method and the relational questions requiring greater exploration and probing are best inquired into using the case study methods. The case study methods discussed below will commence by revisiting the descriptive questions during the case study implementation in order to capture any emergent findings. Answers to the descriptive questions from both the survey and the case study will be inquired into further as inputs to the relational questions using the case study methods. A primary mechanism for this mode of inquiry, that links the descriptive to the relational, will be through the use of interviews.

The interview is used as a means to get the participants to share their stories and experiences regarding the phenomenon of interest for each research question. The narrative produced in the interviews will be recorded using the causal mapping technique and these causal maps will be further processed and converted to causal matrixes for analysis. The causal matrixes from interviews with persons holding similar positions across the various cases in the case study will be compared with each other to identify patterns, similarities, and differences. During the interviews the causal maps will be augmented with annotated text. Additionally, an interview transcript will be produced within 24 hours of the interview using the causal map and notes recorded during the interview. A copy of the transcripts and causal maps will be shared with the interviewees so that they may add any additional information that they may wish to share.

The interviews will be semi-structured in order to maintain a natural flow to the conversation and open-ended questions will be asked to inquire into the topic under discussion. The questions asked during the interviews examine the phenomenon of interest, which in this case is the interplay within the project because of conflicts and negotiations, from the perspective of the project and process. A divergence and

convergence interviewing strategy will be followed in order to explore the phenomena in more detail, the use of this strategy involves asking what, what if, and then-what type of questions. In the divergence strategy the interviewer will begin the interview by posing general questions to establish a broader understanding of the project and to understand the context within which the interactions are taking place. This line of questioning will continue until the interviewee reveals something pertinent to the topics of interest to this study or the questions checklist is exhausted. If the interviewer determines that the divergence strategy is not resulting in any information then he will adapt the questions in order to increase the relevance of the answers being received. If the relevance of the responses still does not improve then the interview will be terminated. In the alternate case that the interviewee reveals something pertinent or of interest to the topic of the study then the convergence interview technique will be adapted. In this technique each successive question will inquire deeper into the topic to understand it further. This line of inquiry will continue until any further questioning does not add to what has already been disclosed.

The information resulting from the explorations arising from the convergence and divergence techniques explained above will be recorded in the form of causal maps (e.g. see Eden and Spender, 1998, Huff, 1990). It is interesting to note that the convergence & divergence questioning strategy and the causal mapping technique are in a recursive relationship where one contributes to the other. Therefore, in one way the interview questions are facilitating the development of the causal map and in another the causal maps are guiding the direction of the interview strategy. Interview data will be followed through with observations if permitted by the gate-keepers (i.e. those responsible for allowing or disallowing access to a particular project) to uncover new evidence and to validate the findings of the interviews. I propose to use the direct form of observation during the study, where observations will be made during project related meetings. Only events pertaining to project related conflicts & negotiations will be recorded in a research diary during the time of observation. A detailed observation protocol is provided in Section 4.10.

The study will also make use of documents such as memos, project digests, and issue reports in an effort to unravel the context behind project related conflict & negotiation and to understand more completely how conflict & negotiation play out within project environments. A foreseeable problem with this approach is that

access to documents may be limited by project gate-keepers. Therefore, this method may or may not prove useful.

I now explore the role of the case study methods in each research question.

4.7.1 Role of Case Study in Research Question 1

What drives project conflicts & negotiations and how?

The first research question is a combination of two questions. These are:

1a: What drives project conflicts & negotiations?

1b: How do these drivers drive project conflict & negotiations?

Question 1a is a descriptive question and as expressed above will be revisited using the case study methods to determine if anything new emerges and to establish the groundwork on which to base further exploration. Additionally, as the survey results are an aggregation of the drivers of conflicts & negotiations from a collection of projects, it is of interest in the case study to explore if the projects comprising the case study experience the same drivers as the aggregate and to investigate any deviations. The interview will be used as a primary method to explore this in more detail and to inquire into any deviations from the survey results. In addition I make use of direct observations, as discussed above, at this stage to investigate the phenomena further. However, due to the limitations inherent in direct observations I may not be able to observe the phenomenon firsthand therefore, the achieved documents will be examined to supplemental our inquiry (explained in more detail in the next paragraph).

The second concern of the case study is to explore how the drivers work in generating conflicts and negotiations. This exploration will take place through the use of the interview and document analysis. The interview as discussed before will follow a convergence / divergence technique to explore the phenomenon in more detail. The use of interviews and observations for this question is similar to that identified for question 1a above. The use of documents will be an additional tool used for this question, in looking at documents of the project I will be seeking out evidence of catalysts that may have or eventually might give rise to project conflict & negotiations.

4.7.2 Role of Case Study in Research Question 2

How do projects behave in the presence of conflict and negotiated action? Is there a pattern to this behavior?

The second research question is a combination of two questions these can be posed separately as:

2a: How do projects behave in the presence of conflict and negotiated action?

2b: Is there a pattern to how projects behave in the presence of conflict and negotiated action?

As identified in section 4.3.2 both these questions are relational in nature. The results of the survey pertaining to question 2a will be verified in the case study projects and any deviations will be inquired into. This inquiry will take place in the form of an interview and document analysis. Where the interview will inquire into the nature of the behavior and how it occurs and the document analysis will be concerned with finding evidence of project behavior in the presence of conflict & negotiations.

Question 2b seeks to determine if there are any patterns to the behavior of projects experiencing conflicts & negotiations. This question will be inquired into using direct and indirect questioning. The direct questions will ask the participants if they have experienced the existence of any patterns to the behavior of projects undergoing conflicts & negotiation, however this strategy may run into problems as the respondents may not be able to answer as they may not be able to identify or recall a pattern or alternatively they may offer a biased response. Therefore, an alternative strategy will be used, that is to explore these patterns through the answers to other questions asked during the study. Additional methods such as document analysis will be used to search out patterns of behavior.

4.7.3 Role of Case Study in Research Question 3

Does a project having a heterogeneous cultural makeup experience conflict differently than a project with a homogenous cultural makeup and if so how?

This research question is a combination of two questions. These may be rephrased as follows:

3a: Does a project having a heterogeneous cultural makeup experience conflict differently than a project with a homogenous cultural makeup?

3b: How does a project having a heterogeneous cultural makeup experience conflict differently than a project with a homogenous cultural makeup?

Question 3a is a descriptive question that is interested in determining whether culturally homogeneous and heterogeneous projects experience conflicts differently. As discussed in section 4.3.3 it makes better sense to determine the answer to this question by answering question 3b.

Question 3b is a relational question and is better suited for exploration using the case study methods. The first task is to determine whether the present project that the respondent is working on is composed of a diverse or unitary cultural makeup. Our next question will extend the inquiry and probe, using the causal mapping and divergence convergence technique discussed before, into how the project team experiences conflict.

As a similar inquiry was made using the survey questionnaire, see discussion in section 4.3.3, I will therefore be in a position to reflect against the results of the survey and also compare between the cases in the case study. This will allow us to determine whether a similarity or dissimilarity in the behavior of the project exist because of their cultural makeup.

The use of direct observations will play a significant role in exploring this phenomenon further. This is because observational data from culturally homogenous projects will be compared and contrasted against observational data from culturally heterogeneous projects. Additionally, document analysis will be used to seek out any cultural references in the project documents related to conflicts and negotiations.

4.7.4 Role of Case Study in Research Question 4

How does a project team working in a project experiencing conflict manage the conflict? What negotiation tactics do they use, when do they use them, and why?

This research question is a composition of different types of questions. These may be listed individually as:

4a: How does a project team working in a project experiencing conflict manage the conflict?

4b: What negotiation tactics does the team use?

4c: When do they use these particular negotiation techniques?

4d: Why do they use these particular negotiation techniques?

The first question is a relational question and seeks to determine how the project team manages a conflict. In this question I am interested in knowing what the project team does to reduce the effects of the conflict it is experiencing. Primarily, I am concerned with the pre-negotiation actions of the project team. The interview and observation (direct and indirect) techniques would be most ideal for seeking out an answer to this question. During the interview I will ask open-ended questions to determine which pre-negotiation techniques the project team uses to manage their conflicts. The direct observation method will allow us to observe firsthand how the team manages its conflicts. During the process of the observation I will be able to record any additional pieces of information not mentioned during the interview. Document analysis will be used to look for any additional information that may have been recorded in the form of memos or minutes of meetings.

Question 4b is a descriptive question that is directly concerned with the negotiation techniques used by the project team. The answers to this question received in response to the survey will be used during the interview to reflect against and to identify any additional techniques that may be in use during the case study projects. As mentioned in section 4.3.4 there are only a handful of negotiation techniques that are commonly known, I will therefore be on the lookout for any other negotiation techniques that may not have been referred to in the answers to the survey question or that may be in use without it being recognized by a specific name. Direct observations during the interview will prove helpful in determining an answer to this question, as I will be able to experience firsthand any experience techniques that the project team members may engage in. Additionally, document analysis may prove fruitful in finding any additional clues as memos and minutes of meetings may contain a record of some of the negotiation strategies used during the project.

Question 4c is a relational question, which is interested in exploring the relationship between particular types of conflicts and the types of negotiation strategies they invoke. In this question I am interested in determining if particular types of conflicts invoke particular types of responses i.e. whether there is a predictable pattern of relationship between the type of conflict experiences and the nature of the

response it elicits. This question will be answered in conjunction with the inquiry for question 4d.

Question 4d builds on the answer to question 4c and continues with the relational line of inquiry. In this question I am interested in knowing why a particular negotiation strategy is chosen i.e. to explore the logic and reason behind the choice. Here I am interested in finding the method behind why the project team chooses a particular negotiation strategy or to determine if it is simply a programmed response. This question would be difficult to answer directly and will require a thorough line of questioning during the interview. Additional methods that will be used to investigate this question are the direct observation and document analysis. Direct observations of project meetings will be used as it may facilitate in unraveling part of the decision making process. Project documents will specifically be examined to look for any prescribed negotiation strategies.

4.8 Case Study Interview Checklist Questions

Based on the discussion above, included in appendix G is a checklist of interview questions for the study. As mentioned before the interview strategy used in this study is the semi-structured interview therefore, the questions provided in the appendix are order independent and are presented in the form of logical categories for the sake of readability. During the interview the researcher will determine which question to ask when and may alter any question as required to maintain interview flow; additionally the researcher may introduce new questions as further lines of inquiry become evident.

The checklist questions presented are categorized into two types: Project background questions and phenomena related questions; where the former are concerned with understanding the nature of the project in more detail and the latter in exploring the phenomenon of interest in greater detail.

4.9 Interview Protocol

The duration of the interviews is expected to be between 60 minutes to 90 minutes. Prior to the interview the researcher will provide the participants with clear instructions pertaining to the nature and purpose of the interview. Following which

the participants will be provided a consent form, a copy of which is presented in appendix F, and they will be briefed about their right to refuse the entire interview or any part of the interview. Each participant will be asked to read and sign the interview consent form prior to the interview. If a participant refuses to provide the interview they will not be asked to provide a reason, the researcher will at this point cordially break off the interaction and move to the next interview. Maintaining the confidentiality of interviewees and data will continue to remain a concern for the researcher. I propose to maintain the confidentiality of the respondents by not using their actual names, position titles, and the identity of the project on which they are working on that may lead to the actual identity of the interviewee being deciphered. Additionally the interview data will be kept confidential and will only be accessible to the researcher and their supervisor, the data will be stored at a secure location. Presenting the interview results in anonymity is not an issue for this study as the focus of the study is to understand the phenomena of conflicts & negotiations within projects and the role it plays in the complexity of the project and I do not foresee deriving any benefit from disclosing the names of the participants or the projects on which they work. It is worth mentioning that despite the measures identified above it may not be possible to maintain the complete identity of a project a secret as the size (both physical and monetary) and nature of some of the projects included in this study are such that it may be possible with reasonable effort to identify particular projects. As these are factors beyond the control of the researcher, maintaining confidentiality of the projects and those interviewed will be on a best effort basis.

Another concern of this study is that the interview participants may not see any value or benefit in the research and therefore may not be forthcoming with their responses. This can be problematic to the study as the quality of the information will suffer and therefore any results derived will not be representative of the actual conditions found on the project site. Thus, to counteract this I will deploy the following three strategies during the interview: First, I will ensure that a friendly and professional rapport is developed with the participants, by so doing the participants will feel more at ease with the researcher and the interview process and will therefore be forthcoming with their responses. Secondly, I will inquire into any topic of interest to the research study raised during the interview using a questioning strategy where increasingly probing questions will be asked on a topic, allowing us to explore and understand it more completely. Finally, a topic of interest may be revisited at several

different times during an interview thereby ensuring that the responses received are consistent and therefore internally valid.

The interview will employ a convergent and divergent questioning strategy as described in section 4.6. No audio recording will be made during the interview this is because the involved process of creating a causal map is not amicable to being tape-recorded. Additionally prior experience of the researcher and the nature of the topic under inquiry is such that the presence of an audio recording device has been found to limit the sharing of information. However, handwritten notes will be taken during the interview, which will function as an aide-mémoire for later interpretation of the causal maps.

Development of causal maps during the interview is concurrently a method for guiding the interview and data analysis. This real time analysis will allow for appropriate questions to be asked during the interview from the check list of questions, discussed in section 4.6, and in formulating new questions for further inquiry. How the interview results will be analyzed is discussed in Chapter 6.

4.9.1 Interviewee Selection Criteria

In an effort to fully understand the conflicts & negotiations taking place within a project and their impact on the complexity of the project I will speak with a variety of individuals within each project. However, not all projects are organized similarly nor do they follow similar naming conventions for the titles of the project staff. Thus to ensure that the responses of all the key respondents within each project organization are captured, I will use generic titles for similar positions across the case study projects. Where a position unique to a specific project is found that does not have an equivalent within other projects included in the case study, it will be identified in our write up and its uniqueness will be a cause for further investigation to understand the contribution it is making in the interplay between conflict & negotiation and project complexity.

A discussion of who will be interviewed and why is helpful at this point because it will facilitate us in establishing a checklist of the persons that will be sources of data for this case study and the type of information I expect to gather from them.

In this study I am interested in speaking with persons that form the core of the project management team and are responsible for the daily management activities

of the project (from the principal organization). I am equally interested in speaking with individuals that are at the interfaces of the project, both internal and external, such as those at the interface between the project principal & contractor and the external interfaces such as those between the project designers and analysis teams or those between the project team and the operational departments. The reason why it is necessary to conduct a multiple perspective examination of the research topic is that because the topic of conflict and negotiations is such that it is not unidirectional and a complete understanding of the phenomenon requires that the perspective of all the parties involved are captured. Furthermore an analysis of all the multiple perspectives will reveal the actual issues underlying the phenomenon under study. Additionally, this will allow us to separate the context (i.e. why a conflict occurs?) from the process (i.e. how a conflict is played out?) and aid in the development of a comprehensive understanding of how conflicts and negotiations are contributing to the complexity of projects.

During the interview process I will be speaking with persons in similar positions across different projects. By so doing I will be able to compare the findings between the different cases comprising the case study. How this comparison will take place has already been discussed in our discussion of the causal maps.

The case study implementation will commence after the survey results have been aggregated. The survey responses will be used to inform the interview questions that will be asked during the case study implementation.

4.10 Observation Protocol

This section elaborates the logic underlying the selection of the observation technique employed by this research study and details the protocol through which the selected observation technique are deployed.

There are a variety of observation procedures available such as diaries, activity sampling, unstructured observations, and structured observations (Martinko and Gardner, 1985) – these may be implemented through the use of either direct or indirect observational techniques. This research study uses observational methods for several reasons. Firstly, the work of Mintzberg (1968, 1970, 1971) demonstrates that observational studies are qualitative/idiographic in nature, because they answer not only the what but also the why questions (Martinko and Gardner, 1985). As

this study is interested in developing a greater understanding of the phenomenon of conflicts & negotiations within the projects, and the nature of some of the research questions is such that they ask for functional information, it makes perfect sense for us to use observational techniques. Secondly, observational studies allow for an exploration and understanding of the environment within which the projects and their processes are enacted; contingency theorists, such as Feilders (1979) and House and Mitchell (1974) concur that understanding the environment is essential to completely understanding the processes operating within it. Thirdly, observational methods are fundamental to understanding the organizational ‘culture’ (Silverman, 2008), which again is a part of the environment.

Observational techniques have been used in a variety of studies. The work of Whyte (1993) - originally published in 1949 and Mintzberg may be considered seminal in establishing the method. As this study follows Miles & Huberman’s (1994) recommendations for a tight research design, I will adapt Mintzberg’s structured observation method as a mechanism for direct observation. It may be useful to point out that structured observation is defined by three criteria: Reliance on observation by a person other than the subject; reliance on the use of category systems; and the method does not use randomized activity sampling procedures. Therefore, in this study I use structured observation as a tool for direct observation.

4.10.1 Structured Observation Protocol

This research study employs the use of direct observation to capture additional contextual information pertaining to the study’s research questions. Observations during this study will be made during project meetings taking place during the normal course of the project. Permission to sit in on meetings will be sought from each of the projects included in the case study and observations will commence pending approval. During the meetings only themes and topics of interest to the research questions will be observed with the objective of finding examples and stories that supplement and bring to life concepts discussed during the interviews. The researcher’s role during the meetings will be that of a silent observer and note taker. The duration of each observation period will include not only the meeting but also the activities preceding and succeeding each meeting, ceasing only when the researcher departs from the site.

4.11 Documents and Records Examination Protocol

During the interviews the project personnel will be asked to provide the researcher with any documents and/or records they find would be of value to the research study. These will be examined for the purpose of both developing an understanding of the project and also to seek out documented evidence (if any) of how the project conflicts & negotiations are handled. During this phase, the focus will be on seeking out interesting examples or instances of occurrence of project based conflicts and negotiations. If permitted, copies of these documents will be made by the researcher otherwise short notes will be made.

4.12 Translation Protocol

The official language of Pakistan is English, therefore both the survey and case study will be implemented in the English language. However, as there are regional languages in use, therefore some translations will be necessary. I detail how translations will be handled during the survey and case study next.

I anticipate encountering the use of some local language by our respondents. Therefore, care is needed to translate such words or statements into English without losing the respondents intent. To ensure reliability in the translation process, three native speakers of the local languages will be asked individually to translate the word or statement in question. The most common translation from within the answers provided will be chosen and used in the study.

Although the interview questions will be asked in English, I anticipate receiving responses in both Urdu (national language of Pakistan) and Pashto (regional language of the KP province). However, I do not foresee the translation activity to be of concern during the interview process. This is because of the causal mapping technique used by this study to capture interview data. This process entails both the respondent and researcher creating a causal map of the processes and events being discussed with the respondents. These causal maps are developed by the respondents with assistance from the researcher, and are created realtime using a software during the interview. As data entered into the software will be in English, therefore the interviewees' will be asked to translate their statements as they input

data into the software during the interviews. Reliability is ensured in that respondents themselves translate their language and are in control of the intent they wish to convey through their statements.

4.13 Negotiating Access

Two primary methods were used by this study for collecting data, i.e. survey and interviews, both of which required the identification of appropriate research participants. Care was exercised in identifying and negotiating access with those participants that would have access to information relevant to the topics of this study. Plans were developed and implemented to acquire an appropriate set of respondents for the survey and participants for the interviews. These are discussed next.

4.13.1 Accessing Survey Respondents

The survey was implemented using a simple random sampling method. Results of the survey are presented in Chapter 5. To gain access to a collection of project managers working on large and complex projects several professional organizations were contacted, including:

- Pakistan Engineering Council (PEC)
- Project Management Institute's (PMI) Chapters in Pakistan
- Contractor Association of the KP Province
- Planning Commission of Pakistan (PCP)

Each of these organizations had to be contacted numerous times during the process of acquiring access. Contact with the firms listed above was established first by telephone, followed by faxing and emailing a letter detailing the nature and intent of the research study. Telephonic contact either resulted in requests for more information, or requests to contact specific individuals within the organization. Requests for more information were fulfilled using a channel of communication preferred by the person making the request. Requests for contacting specific individuals were handled by repeating the steps outlined above. Respondents were assured confidentiality in an effort to ensure that they would be forthcoming in their answers.

Despite numerous attempts the PEC did not provide direct access to their member engineers' contact list. However, I was provided a list of contracting firms that were registered with the PEC. Unfortunately, the list of firms was not complete, in that no mailing (email and postal mail) addresses were provided, the phone numbers listed were without area codes, and fax numbers were missing. I was therefore unable to contact project managers employed by these firms.

I contacted all three PMI chapters in Pakistan i.e. those in Islamabad, Lahore, and Karachi. Although, the chapters all listed email addresses of their members in office, my email requests did not result in a single response. However, I was able to contact all the chapters' presidents via telephone. Two of whom provided their personal email addresses and requested that links to the online survey be sent. I received confirmatory emails from both individuals stating that a link to the survey and associated description had been circulated to their members. One chapter president however, hung up the telephone on me halfway through our conversation and would not attend subsequent telephone calls. Therefore, I was unable to circulate my survey to members of the Islamabad chapter.

The contractor association of KP province was contacted via telephone, which resulted in me being invited to attend their annual dinner. During the dinner gala I established contact with a large number of their members. A total of 71 individuals agreed to participate in my study and over the course of the next few weeks I personally administered my survey either by visiting the firms' offices or via telephone.

Requests to the PCP resulted in an email list of 24 individuals being provided. All the individuals were emailed with background information about the study, a copy of the survey, and a link to the email survey. I followed this initial contact with three reminder emails spaced two weeks apart. However, I did not receive a single acknowledgement of any of my requests.

In addition to the above the online link to my survey was emailed to 73 public sector universities within Pakistan, and also to 143 personal and business contacts. Three follow up reminders spaced two weeks apart were sent to this group. Aside from 2 emails from the public sector universities acknowledging receipt and confirming survey completion and 1 request for clarification on a particular question, no other responses were received. From my personal contacts, 48 persons responded indicating that they had forwarded the survey to an appropriate person.

Some of the surveys were filled online but most were completed in person in the form of a structured interviews. The survey implementation would begin with a brief description of the topic of the study. Questions would be asked from the respondent and their answers recorded one by one. If an answer was not clear then clarification would be requested. On the other hand if the respondent was not clear on the question being asked it would be restated differently. To ensure that the respondents were open and honest in the answers provided, I requested that the surveys be administered in a location where there would be privacy. In addition the respondents were ensured that names and organizations will not be recorded on the survey.

4.13.2 Case Study Projects Selection and Negotiating Access

Building on the discussion presented in Section 3.8.4, which detailed the methodological concerns underlying the case study projects selection, this section details how the case projects were selected and access to participants was negotiated. Analysis of the data gathered as a result of the case study implementation is presented in Chapter 6.

Case study interview organizations were selected using the technique of non-random purposive selection, which according to Creswell (2007) is traditionally used in qualitative studies. In implementing the case study I wanted to ensure that the projects selected were sufficiently large in size, in comparison to other projects taking place within the vicinity of the Khyber Pakhtoonkhwa (KP) Province of Pakistan, and that the projects be from various industries so that a variety of experiences can be captured. A simple criteria for project selection was established before starting my search, that is: the project must presently be in the execution stage. Several projects were identified that were active throughout the KP region, through personal and business contacts, and print media. In addition, I was aware of several projects taking place in the region of KP through several participants in projects management trainings that I had taught previously.

Establishing access to a project necessitated finding a contact on the project through whom further access could be negotiated. Contact persons were identified by asking my professional and personal contacts if they knew someone working on

these projects, by searching through newspaper archives to find tender notices for contact details, and by visiting the projects sponsoring organizations' websites. As key contact persons on projects identified through the trainees were already known, therefore these individuals were recontacted to confirm the project's status and their role in the project.

Once a listing of projects and available contact information had been collected, the next step was to formulate a criteria for selecting amongst the projects for inclusion in the case study. This decision was based on two key factors, project (structural) complexity and expected number of (task) conflicts. Next I describe how access was negotiated on each project included in the case study.

As literature discussed in Chapter 2 identified construction projects to be the most complex and laden with conflicts, therefore I wanted to include a variety of construction related projects in the case study. Analysis of the data arising from the construction related projects included in this study is presented Section 6.3.

Three dam related projects were identified in the region and the process of negotiating access was initiated. On one of the projects my contact placed me in direct contact with the Project Engineer. However, the Project Engineer was extremely unhelpful. After attempting to negotiate access on this project for over two months I finally gave up.

Negotiating access on the small dams project was much easier as I had previously performed consulting work for the Managing Director of the project's sponsoring organization. I was assured full access to all the project staff and project documentation. The dam maintenance project was difficult to negotiate entry into, because I was unable to find anyone on the project through my contacts. The only option was to visit the project site physically, however as the project was located in the tribal area and was housed in secure premises I needed prior permission to enter the site. A personal contact's further contact turned out to be the head of the dam's security, who invited me to meet him on the premises of the dam. This person put me in contact with the dam's civil and mechanical engineers, through whom I was able to get access to the rest of the project team. I had similar difficulties in accessing the dam extension project. The only contact I had found at this project was the supervising engineer, however despite numerous attempts (via telephone and fax) I was not able to get in touch with him. Access to this project was secured by showing up at the project site and negotiating access from the security checkpoint.

I was eventually put in contact with the project manager and consequently through him to the rest of the project team. The last construction project, i.e. the campus construction project, was chosen based on convenient access to data, as it was being implemented by my employer.

The second set of projects consisted of two projects i.e. the mining project and vocational education program. Analysis of the data collected for these projects is presented in Section 6.5. Both of these projects were being conducted by an organization with which I had worked previously in providing several project management trainings. My contacts allowed me full access to both the projects including the project staffs and project documentation. I had considered adding another large scale vocational education project in the case study, this was a military run project and despite numerous requests and visits to the project site I was not provided access to the project. Attempts to gain access to this project were eventually stopped.

The last three projects were perhaps the most difficult to find. This is because of a downturn in the movie industry, which meant that there were not many projects available. Analysis of the data collected for these projects is presented in Section 6.7. I was not able to find a single large scale movie making project taking place in ‘Pollywood’ (Peshawar based movie industry). However, I did find a growing business of movies being produced and sold directly on compact disks. Unfortunately, as these production efforts were very small and involved very few resources it was not feasible to include them in the case study. During this time attempts were made to contact the Pakistan Film Industry Association, however their office bearers did not respond to any of my requests. Several of the large-scale movie studios in ‘Lollywood’ (Lahore based movie industry) were contacted but none were in the process of making a movie, nor had made one in the last 6 months. Through contacts in Lollywood, I found that there were two independent movies being produced, one in Islamabad and the other in Peshawar. I was able to contact the producer/director of both the movies directly, both of whom agreed to participate in the study. The TV serial production was included in the case study as I wanted to capture as many perspectives from artistic projects. Access to the TV serial production was negotiated through a friend who is a music producer.

A snowball sampling technique was used on all the projects included in the case study. Cognitive access to the sources was ensured by clarifying to them the purpose of the study. The participants were assured that their identities and the identities

of their projects will not be disclosed in the study. Also, no audio-recording devices were used while collecting data, which further facilitated in maintaining participant anonymity, making it easy for the respondents to be more open in their responses.

4.14 Formulating a Discussion using the Theory of Communicative Action

The choice of using Habermas' Theory of Communication Action (TCA) was made apparent in Section 3.10. This section seeks to establish a pragmatic view of the theory by identifying those elements of TCA through which it will be used to make sense of our data. A discussion on the present study's data from the perspective of TCA is provided in Chapter 7.

It is not possible to summarize Habermas' exhaustive TCA in such a limited space, nor is the intention present to make such an attempt. Rather, what I am concerned with in this section is to identify those elements of Habermas' theory that may be used to reflect practice against theory i.e. the practice parlayed by the interviewees against TCA. Elements of Habermas' (1984) theory outlined in this section will be used in Chapter 7 to discuss the findings derived from the empirical work conducted as a part of this study (see Chapters 5 and 6).

The first element of TCA is the concept of rationality, which is described by Habermas (1984) as claims against the world taking the form of how the world is and how it should be. The validity of such claims is 'transsubjective' (ibid) i.e. they hold the same meaning for both the 'observer' or non-participant and the actor. Two rationalities are proffered by Habermas (ibid): the cognitive-instrumental rationality and the communicative rationality, where the former strives for instrumental mastery and the latter communicative understanding. Thus, the first concern of Chapter 7 is to make apparent the rationality adhered to by our interviewees and their associated ontological position from the perspective of TCA. As this study relates more to the communicative rationality and less to the cognitive-instrumental rationality therefore focus is primarily on an exploration of the former.

The second concern taken up in Chapter 7 is the validity of the rationality-based actions. Habermas (1984) is silent on what validates the cognitive-instrumental actions, perhaps because it is taken for granted that they are validated through a

reference to the adopted instrumental view of those involved. However, TCA argues that two conditions are necessary for communicative rationality based actions to be considered rational: both parties involved agree to a goal, and that the goal is achievable.

Habermas' (1984) validators of (communicative) rationality are a synthesis of those suggested by Max Black – use of the term 'dianoetic' below, refers to discursive reasoning or critical reasoning. These are:

1. Actions under or potential control as suitable for dianoetic appraisal.
2. Only actions directed toward some end in view can be reasonable or unreasonable.
3. Dianoetic appraisal is relative to the agent and his choice of end-in-view.
4. Judgments of reasonableness are appropriate only where there is partial knowledge about the availability and efficacy of the means.
5. Dianoetic appraisal can always be supported by reason.

The third concern of Chapter 7 is to examine the rationality of what Habermas (1984) terms 'stimulated responses' or changes in system state, also considered 'quasi-actions' representing 'capacity for action'. In keeping with Habermas' (ibid) validity criteria defined above I accept a 'stimulated response' to be valid only if it is goal directed.

The last concern of the discussion contained in Chapter 7 is to present the 'life world' that underlies the case study projects, which is a unitary world created by the shared understanding and beliefs of the community (Habermas, 1984). The life world is used as a source of reflexivity for rational action, which are valid if the actions exhibit 'contextual intelligibility'. The concept of the 'life world' is used to provide semblance to the complex interrelationships exhibited during the projects in formulating a model of reality that is a conjuncted representation of reality, this concept has already been discussed in Chapter 2 Table 2.12.

4.15 Summary

Following implementation of the empirical plan outlined, the collected data will be analyzed. Results of the survey data analysis are discussed in Chapter 5 and those

of the case study in Chapter 6. A discussion on the data analysis is presented Chapter 7.

Chapter 5

Analysis of Survey Data

5.1 Introduction

This chapter presents an analysis of the survey data collected in the first phase of implementing the mixed methodology employed by this study; the second phase involving implementation of the case study is discussed in Chapter 6. The precise implementation of the survey methodology was discussed in detail in Chapter 4, which presented the empirical plan guiding this study. The underlying research philosophy driving this study and the mixed methodological approach adopted by this study have already been discussed in Chapter 3.

Data presented in this chapter was collected using two instruments, both of which were administered in tandem. The first survey instrument, adapted from Shenhar and Dvir (2007) measures a project's complexity, yielded quantitative data that was analyzed using aggregate statistics. The second instrument, which is developed based on the review of literature presented in Chapter 2 resulted in qualitative data. The objective of this instrument is to gain an understanding of the phenomena of conflict & negotiation within projects; to understand what conflict mitigation techniques are employed by the project team; and to understand whether these mitigation techniques are premeditated or reactionary. In order to analyze the qualitative data I make use of the Leximancer software package – the reasoning underlying its use has already been elaborated upon in Chapter 4.

As this chapter makes extensive use of the Leximancer package the following section is devoted to presenting a discussion on the software.

5.2 Overview of Leximancer

The objectives of this section are to provide an overview of Leximancer, to discuss its underlying algorithm, to present the results of using the software on a simple dataset in order to clarify how it works, and to exhibit that the software is in prevalent use in the academic community.

I make use of the Leximancer software (Smith, 2007) as an assistive software during this study to perform comparative content analysis on the qualitative data gathered as a result of our survey implementation, a similar approach has been used by Mengel et al. (2009). In order to maintain research bias at a minimum the defaults of Leximancer were accepted in all cases, meaning that the output generated by the software is, with a few exceptions (such as where redundancies within the data existed), accepted at face value. While analyzing the data the recommendations of Mengel et al. (ibid) regarding the removal of redundancy within the data were closely followed i.e. similar concepts identified by the software were merged. For example, the concepts of ‘manager’ and ‘management’, ‘conflict’ and ‘conflicts’, and ‘project’ and ‘projects’ etc. were merged together. This step was followed by eliminating any concepts that were semantically irrelevant e.g. the concept of ‘conflict’ within ‘conflict’ was suppressed in the output because it did not make sense, similarly, the concept of ‘project’ within ‘project’ was also removed. A conscious effort was made to not suppress the concepts of ‘project’, ‘conflict’, ‘negotiation’, and ‘complexity’ from the output as the responses received from our respondents related to these concepts and I felt that the results derived would not make much sense without these contextual categories. The use of Leximancer in this study is as an assistive tool that performs part of the content analysis, while the control still remains with the researcher. The use of Leximancer in the content analysis performed during this study could be considered as spread across three levels, a similar conceptualization is used by Gerwal (2008). On the micro-level Leximancer is used for the identification of concept occurrence, at the meso-level it investigates concept co-occurrence, while at the macro-level it produces graphical representations of identified concepts and their relationship with other concepts.

The Leximancer software is based on a thesaurus based searching algorithm that automatically builds, through a recursive process, a thesaurus from the data being analyzed (please note that the precise nature of the algorithm is discussed in

the next paragraph). Leximancer is not confined to English, however, in our case the survey data was collected in English therefore I do not discuss the limitations of Leximancer pertaining to language. The generated thesaurus is based on the concept of ‘occurrence’ and ‘co-occurrence’ of words within the corpus under analysis (Smith, 2007, and Smith and Humphreys, 2005). Through the use of Leximancer it is possible to obtain data relating to centrality, incidence, and networking of concepts (Gerwal, 2008). As this process involves the use of exhaustive adaptive machine learning algorithms, the software needs to iteratively parse the input text several times before it generates an output. In our case the software performed close to 3,200 iterations of the data, which is similar to the results observed by Mengel et al. (2009), prior to output generation. Leximancer has been shown to improve the management of text data and increase the validity of interpretations (Gerwal, 2008). It has been effectively applied to a large corpus of policy documents (e.g. Rooney, 2005 and Gerwal, 2008) and survey data (e.g. Mengel et al., 2009).

5.2.1 Leximancer’s Algorithms

Leximancer uses a three-phase algorithm to analyze text data. The first phase involves identification of the main word concepts in the text being analyzed, this is based purely on a word count performed on the text. In the second phase, the software establishes relationships between the concepts, this is performed based on a word count analysis of the text, where the count is focused on the co-occurrence of two words. The more times any two words co-occur, the greater is the semantic relationship between the two. According to Smith and Humphrey (2005) the first phase performs the conceptual analysis, while the second phase performs the semantic analysis. In the last phase, Leximancer applies a concept-mapping algorithm to the results derived from the two phases discussed above. This phase results in the production of concept maps that present a visual representation of the analyzed text showing: the main concepts, their relative frequency, frequency of co-occurrence of concepts, centrality of each concept, and thematic contexts in which they co-occur (Smith, Grech, and Horberry, 2002; Smith and Humphreys, 2005). Concepts appear on the map in clusters. Concept occurrences identified by Leximancer are important and address a range of important features of the discourse. Each highly connected

and frequently occurring concept characterizes a cluster and can be chosen as a theme for that concept's agglomeration (Gerwal, 2008).

5.2.2 Test Run of Leximancer

In order to test the validity of the results produced by Leximancer and to identify its limitations a test-run was made using a popular dataset. As Leximancer is geared towards the analysis of large bodies of text, it does not function on small sets of data, such as data only a short paragraph in length. Therefore, I needed a set of data that was easy to understand and was a few pages in length. To aid my understanding of the software I used a classic version of 'Cinderella: Or, the Little Glass Slipper' (Dalziel, 1817). No preprocessing of the data was required as the book was available online in the portable document format (pdf).

As discussed in the section above, the Leximancer software follows a two step algorithm for processing data. Output, in the form of 'concepts', is produced only when both the steps are performed. The first step entails a simple word counting exercise of all the words in the text. While the second step is more exclusive and drops all articles, conjunctions, disjunctions, and any helping words from the analysis. I processed several documents through Leximancer and the concept lists generated were free from articles, conjunctions, disjunctions, and helping words. The remaining words, along with their synonyms, are examined for co-location in the text, resulting in a frequency list of concept words. The concept list produced as a result of this experiment is surprisingly similar to the significant activities, actors, and events in the Cinderella story. As performing a manual replication of the activity performed by Leximancer would be an extremely tedious and time consuming task, and as the concept list is similar to their relative significance in the story, therefore I accept it as correct.

In the next step of our experimental data analysis, I verify the validity of the concept list using an assisted count through the original text using Adobe's word count. Results of our analysis are provided in Table 5.1. Please note that the same analysis was performed using Adobe Acrobat Writer, Acrobat Reader, and Apple's Preview, all of which gave the same result.

Table 5.1: Validating Leximancer’s Concept lists using Adobe Acrobat Word Count

Concept	Leximancer Word Count	Adobe Acrobat Word Count	Reason for discrepancy
Ball	13	13	
Cinderella	11	20	Adobe counted chapter headings and back of book promotional material. Actual count without these is 11
Godmother	8	8	
Beautiful	6	5	Adobe missed counting the word ‘beauty’
Lady	6	7	Leximancer ignored one of the instances in the text that refers to a lady other than Cinderella
Prince	6	11	Adobe is erroneously counting one instance of the word “prince’s” and 4 instances of the word ‘princess’
Sisters	6	6	
Bring	5	2	Leximancer has also taken into consideration one instance of the word “brought”
Changed	5	5	
Wand	5	4	There are actually 4 instances of Wand in the text
Splendid	4	3	Leximancer counted one instance of grand as synonym for splendid
Coach	4	4	
Slipper	4	9	Slipper occurs 9 times in the text. Leximancer has counted only those instances where the word ‘glass slipper’ is used, which occurs 4 times in the text
Glass	4	7	Leximancer correctly ignored one instance of the word ‘spun-glass’, ignored the word glass in the book title, and counted the word glass only once in a sentence where it was used twice to refer to the same item
Clock	4	3	There are three instances of the word clock in the text
King	3	3	
Time	3	3	
Home	3	3	
Gave	3	3	
Arrived	2	2	
Court	2	2	

The comparison provided in Table 5.1 shows that Leximancer exhibits very good accuracy in formulating the concept categories. Instances where the various pdf viewers reveals a higher word count than Leximancer I found that Leximancer is behaving more intelligently. Two instances where I am unable to explain Leximancer's behavior are the cases of 'wand' and 'time', where in both these cases Leximancer is considering some word as a synonym which is not correct. This was verified by searching through the document for all synonyms of wand and time.

In one case both Leximancer and our assisted word counts are incorrect, that being the case of the concept of 'lady'. The word 'lady' as a reference to Cinderella occurs in the text only twice. All remaining references are either to Cinderella's birth mother, step-mother, or the fairy-godmother. Considering that this is an oversight in the software, the data it generates needs to be closely examined for similar problems.

The next algorithm employed by Leximancer results in the production of concept-maps from the data generated by the content analysis algorithms discussed above. In the following section I discuss how these concept-maps are to be interpreted. Actual concept-maps from the Cinderella story are used.

5.2.3 Interpreting the Concept Maps

This section pertains to the interpretation of the concept-maps produced using Leximancer. The mechanism describing how concepts are derived from a body of text has been discussed at length in the previous section. As explained in Section 5.2.1, the concepts are processed further by the software to generate concept-maps. The concept-map of the test data processed using Leximancer is provided in Figure 5.1. To read this map properly I need to understand what the different colors, circle sizes, proximity between the circles, and interconnecting lines mean.

The first thing to note is the size of a given circle. The logic underlying the concept-map is that the larger colored circles on a map represent the main themes within the text analyzed. These themes are composed of groups of concepts. As an example, the theme of 'ball', which is the largest circle in Figure 5.1, is composed of the eleven occurrences of the word 'ball' within the text (see, Table 5.1). To aid the recognition of these main themes, Leximancer uses the concept of color brightness i.e. the brightness of a concept dot or theme is related to its relative importance within the text. Put simply, the bigger and brighter the circle the more central

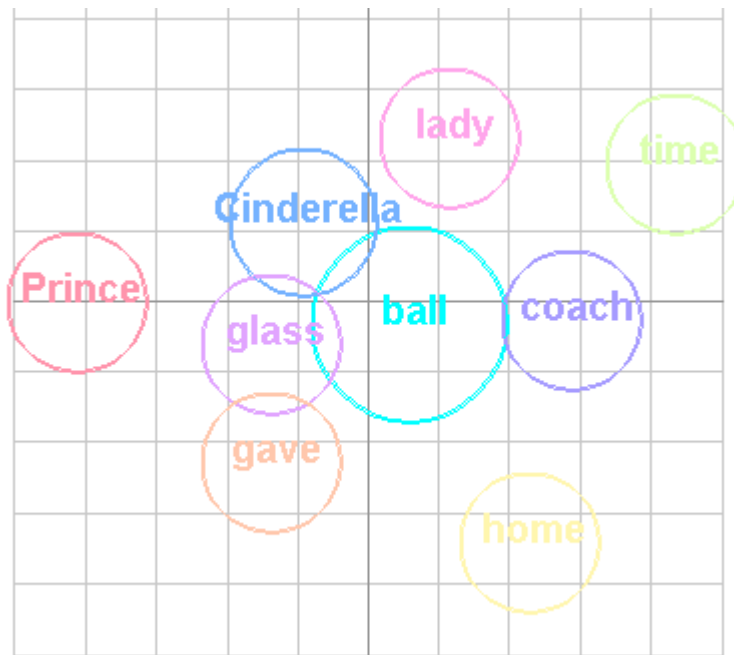


Figure 5.1: Top Conflict Drivers in Projects

the idea within the text. Unfortunately, I found that at times it was difficult to differentiate between the brightness of various theme circles. In such cases it was easier to examine a concepts centrality to the text via its ranking in the concept table (see Table 5.1) rather than relying on the color of the concept-map theme circles. As I found the use of colors in the concept-maps of little benefit all diagrams included in this chapter are presented in black-and-white and a theme's centrality to the text is gauged using concept tables.

The second item of concern when analyzing the concept-maps is to examine the relationships between concepts. Two concepts are considered related to each other if they frequently appear together throughout the text. The concept-map exhibited in Figure 5.1 shows that the themes of Cinderella and ball, Cinderella and glass-slipper, glass-slipper and ball, glass-slipper and gave appear together in the text and are therefore related. Note that the theme of coach and ball are related but not as strongly as the themes of Cinderella and ball, for example. On the other hand, themes such as lady appear near to, but not together with, the concepts of ball and Cinderella. Themes such as time, home, and prince can be interpreted similarly. Coming to an understanding of how to read the concept-maps aid in our understanding of the text being analyzed. As an example, from Figure 5.1 we can see that the theme of time is nearer to the theme of coach than to ball. Therefore,

I conclude that catching the coach on time played an integral role in the story, whereas the ball had little to do with time.

The final point to note in the concept-maps is the grid pattern in each figure. The grid is provided by Leximancer as a reference to differentiate between the sized of theme circles. As an example, the theme of prince is slightly bigger than that of coach but equal to that of coach, lady, time, etc.

5.2.4 Limitation of Leximancer

As discussed in the sections above, Leximancer is an assistive software that aids and expedites the content analysis of qualitative data. This in no way implies that the software replaces the researcher, rather the interpretation of Leximancer generated analysis cannot progress without interpretation by the researcher. The test run of Leximancer discussed in Section 5.2.2 shows that Leximancer was unable to grasp the importance of the theme of ‘lady’ within the Cinderella story. Therefore, it is necessary that the researcher comprehends his data completely and not rely blindly on the interpretations produced by the software. To ensure that the researcher is not led astray by the software some manual tabulation of the data is necessary in order to check the validity of results produced by Leximancer. Additionally, some themes identified by Leximancer may not make much sense and contribute nothing in furthering our understanding of the data. Therefore, such themes will need to be suppressed by the researcher in their final analysis. As an example, see the theme of ‘gave’, which refers to the act of the fairy godmother giving the glass-slipper to Cinderella. This theme is trivial, in that the fairy godmother also gave Cinderella other things as well.

5.2.5 Use of Leximancer in Academia

The sections above have referred several articles appearing in quality peer-reviewed journals and a Ph.D. thesis that makes use of the Leximancer software for the analysis of concerned bodies of text. These references point to the early adapters of the Leximancer software in qualitative studies a quick search using google scholar reveals around 700 other articles referring to Leximancer and showcase its use in academia.

5.3 Overview of the Survey Data

Data contained in this chapter is collected from a variety of projects located within the geographical area of Peshawar, Pakistan, between March and May 2010. A total of 93 questionnaires were filled from 76 different projects, out of which 7 were rejected because of incompleteness or irrelevance. Consequently, the data presented in this chapter stems from 86 questionnaires from 73 different projects.

The survey was initially distributed using Googledocs and was available online during the entire survey data collection period. Online distribution of the survey resulted in 18 questionnaires being filled, in response to an initial request to participate and 3 followup reminders. However, 3 responses were rejected as they came from projects located outside of the geographic region of concern to this study. As requests to participate in the survey and associated reminders were posted to project management related discussion boards and social media websites, emailed to membership databases of various project management associations, and emailed to numerous project contracting firms in the region the response rate is undeterminable. After the 2nd reminder only 2 questionnaires were received in a period of 15 days; consequently, a 3rd reminder was sent out resulting in 1 response being received in a period of 10 days. I therefore resorted to administering the survey in person, a total of 150 project personnel were contacted, resulting in 71 questionnaires being filled. Out of these 4 were rejected because of irrelevance or incompleteness, representing a 47% response rate. Simultaneously, printed survey questionnaires were distributed to 20 project organizations, along with contact information of the researcher and links to the online survey. As a response only 4 questionnaires were returned, which represented a 20% response rate.

Data analysis of the data was performed on-the-fly while data was being collected, this enabled us to track statistics and terminate the data collection effort when saturation was found. In our case saturation was found around the 65th response received. However, the data collection effort was continued for more responses to ensure that I did not terminate the process prematurely. Finding no additional information data collection was halted at the 93 questionnaire mark. Data from completed questionnaires was entered into MS Excel for quantitative data analysis. The MS Excel spreadsheet was exported as a comma separated (or '.csv') list for

Table 5.2: Projects Surveyed by Sector

Sector	Projects Surveyed	%of Total
Education	7	8%
Healthcare	7	8%
Information Technology	5	6%
Construction	27	31%
Advertising	2	2%
Irrigation	2	2%
Social Development	6	7%
Pharmaceuticals	2	2%
Consulting	2	2%
Engineering	2	2%
Mining	2	2%
Telecommunications	1	1%
Manufacturing	2	2%
Agriculture	1	1%
Entertainment	6	7%
Consumer Electronics	1	1%
Energy	4	5%
Insurance	2	2%
Wildlife	1	1%
Defense	4	5%
Total	86	100%

processing of the qualitative data using Leximancer. A breakdown of the 86 projects by sector is presented in Table 5.2

The largest number of projects surveyed belonged to the construction sector, which represents 31% of the entire dataset. This is in agreement with findings from the literature, which indicates that project management is dominated by the construction industry (Betts and Lansley, 1995, Kloppenborg and Opfer, 2002, Kwak and Anbari, 2008) and it was therefore anticipated that a major portion of the data will pertain to construction.

The second biggest sectors to emerge from the data were education and healthcare. This too was expected because of Government of Pakistan's focus since 2000 on improving healthcare and literacy rates within the country, therefore a prevalence of such projects is found in the dataset.

The third biggest sectors to emerge from the data are social development and entertainment. It was anticipated that social sector projects will comprise a significant

portion of the dataset because of the prevalence of Non-Government Organization's (NGO) and other social sector initiatives within the region. Interestingly, the social sector development projects had the most difficulty in responding to our survey instrument. This could be attributed to terminology differences between commercial and social sector development projects. However, it would be of interest to explore such projects further to see if there could be other possible reasons.

Please note that projects contributing to the entertainment sector were purposively chosen and therefore their prevalence within the data is purely artificial. This was because the entertainment industry in the region (i.e. Lollywood and Pollywood) has suffered tremendously over the last few years because of Talibanization in the region, therefore entertainment projects are a rare occurrence in the region.

5.4 Complexity of Projects in the Region

In this section I present the results of our analysis of the data stemming from the first instrument used by this study, developed by Shenhar and Dvir (2007), which I deployed to capture the complexity of projects in the region. Shenhar and Dvir's (ibid) Diamond Approach was introduced in Chapter 2 but is revisited in greater detail below.

The Diamond Approach (Shenhar and Dvir, 2007) identifies four dimensions of project complexity, these are: novelty, technical uncertainty, complexity, and pace. The sections below discuss the data analysis against each of these dimensions. However, before I move forward with my discussion, I am faced with the confusing concept of a complexity dimension within a complexity measure. To resolve this issue I examine closely the three constituents of complexity proposed by Shenhar and Dvir (ibid) i.e. assembly (a subsystem), system (a collection of subsystems), and array (a system of systems). Each of which conveys a sense of the number of components involved and the interconnections between them, which is captured by Baccarini's (1996) conceptualization of complexity and referred to as structural Complexity by Williams (1999, 2000). Therefore, to avoid any further complications, I will use the term 'structural complexity' in lieu of Shenhar and Dvir's (2007) use of the term complexity.

Additionally, it is worth noting that the 'diamond approach' (Shenhar and Dvir, 2007) is laden with subjectivity and therefore highly unstable. Subjectivity plays a

role in the ‘diamond approach’ in three ways. Firstly, it is subjective in that respondents are providing their perceived view of the project’s complexity, which may not accurately reflect the project’s complexity in actuality. Secondly, the respondents may rate their projects as slightly more complex because of respondent bias. Lastly, the responses received regarding a single project from multiple project actors could differ because of their previous level of experience on project. Therefore, the results produced by the ‘diamond approach’ are highly unstable if responses are not captured from the entire project management team of a project. This study overcomes this limitation by asking all the respondents from the projects surveyed to provide responses to Shenhar and Dvir’s (2007) complexity diamond. Responses received from projects are averaged as a whole, to get a sense of the average complexity of the projects in the region. Secondly, an average complexity measure of the projects is derived according to the various sectors to which the projects belong. This averaged sectoral complexity measure is used later in Chapter 6 against the average complexity of the case study projects, which is derived by asking all the respondents from each case to complete the instrument developed by Shenhar and Dvir’s (ibid). It should be noted that, in this study, the results of diamond approach are used only as an indication of the complexity spread of the cases and do not influence in anyway the results of our case study data analysis. Thus, in our case the subjectivity and instability found in the diamond approach are inconsequential.

Next I discuss the results of our data analysis against each of the four components of complexity proposed by Shenhar and Dvir (2007).

5.4.1 Novelty

A break down of the surveyed projects’ novelty is presented in Table 5.3. Shenhar and Dvir (2007) decompose a products novelty into three types: derivative, platform, and breakthrough. Our data indicates that most of the projects surveyed belong to the ‘platform’ category, followed closely by those belonging to the ‘derivative’ category, which was expected as most projects are conducted to either improve an existing product or to produce its next generation.

Table 5.3: Product Novelty of the Projects Surveyed

Product Novelty	% of Projects
Derivative	41%
Platform	43%
Breakthrough	16%

5.4.2 Technological Uncertainty

Technological uncertainty is decomposed by Shenhar and Dvir (2007) into four categories: A-Type (low-tech), B-Type (medium-tech), C-Type (high-tech), and D-Type (super-high-tech). Data from our surveyed projects populated against these categories is presented in Table 5.4.

Table 5.4: Technological Uncertainty of the Projects Surveyed

Technological Uncertainty	% of Projects
A-Type: Low-Tech	24%
B-Type: Medium-Tech	28%
C-Type: High-Tech	45%
D-Type: Super-High-Tech	2%

Surprisingly, many projects considered themselves as being High-Tech, which was contrary to our expectations. However, this anomaly could well be because of respondent bias. Rightly so, a very small minority of projects were reported as belonging to the ‘D-Type’ categorization.

5.4.3 Structural Complexity

Complexity, or more accurately structural complexity as suggested by Williams (1999, 2000), is decomposed into three types by Shenhar and Dvir (2007), these are: Assembly (A subsystem), System (A collection of subsystems), and Array (System of Systems). A decomposition of the surveyed projects’ structural complexity is provided in Table 5.5. As anticipated most of the projects surveyed (44%) were rated as complex at a ‘System’ level, I was however surprised to find that this number was not much higher. This is followed closely by larger project, which were categorized as ‘Array’ level structurally complex.

Table 5.5: Structural Complexity of the Projects Surveyed

Structural Complexity	% of Projects
Assembly (A subsystem)	15%
System (A collection of subsystems)	44%
Array (System of systems)	41%

5.4.4 Pace

Shenhar and Dvir (2007) decompose pace into four categories: Regular (delays are not critical), Fast/Competitive (time to market is a competitive advantage), Time-Critical (completion time is critical to success), and Blitz (crisis project). Results from the data is populated against these categories in Table 5.6.

Table 5.6: Pace of the Projects Surveyed

Pace	% of Projects
Regular	39%
Fast/Competitive	17%
Time-Critical	35%
Blitz	8%

Most projects had a regular pace, followed closely by projects of time-critical nature. A smaller portion of the projects considered themselves to be fast / competitive. A blitz pace was found in a much smaller portion, however it is important to note that mostly social sector projects considered themselves in this category. This is in part attributable to the nature of the project work being performed by these organizations and their direct impact on the wellbeing of the people affected.

5.5 Characteristics of the Projects Surveyed

In this section I examine the surveyed projects more closely (using Shenhar & Dvir (2007)'s instrument) to determine their business goal, customer, and strategic goals. This is followed by an inquiry into the general characteristics of these projects such as the project team size, distribution across the lifecycle phases, budget, team competence, % of work contracted out, and presence of a conflict management strategy.

Most of the projects surveyed (70%) had an 'operational' goal, while the remaining (30%) had a strategic goal. A little more than half (53%) of the projects were

conducted for customers internal to the organization, while the remaining projects had external contracts or consumers; however, the difference between these two categories is not significant to be of any considerable focus.

Literature is of the opinion that projects are undertaken by organizations to achieve strategic objectives (Daft and Buenger, 1990, Morris, 1990, Morris, 1994, Whittington et al., 2006, Whittington et al., 1999) and many of the projects were found striving towards strategic extension goals; these may include improving on or extending existing products, goods, services, or results. Distribution of the projects according to their strategic goal's is presented in Table 5.7.

Table 5.7: Projects' Distribution by Strategic Goal

Strategic Goal	% of Projects
Extension	51%
Strategic	16%
Problem Solving	14%
Maintenance	1%
Utility	14%
Research & Development	3%

The average size of the project team was 17, the biggest team was composed of 82 individuals, while the smallest had three.

Most of the projects surveyed were in the execution or phase out phases of the project lifecycle, the remaining projects were almost equally spread across the initiating, planning, and maintenance phases (see Table 5.8).

Table 5.8: Projects' Distribution Across the Project Lifecycle

Project Phases	% of Projects
Initiating	6%
Planning	5%
Executing	48%
Phase out	36%
Maintenance	6%

The budgetary amount of the projects surveyed was \$15.36 million (USD), the smallest project was a movie making project valued at \$2,380 (USD).

Most project managers surveyed considered their teams to be experts or skilled. A very small portion ranked themselves as novices or advanced beginners (see Table 5.9).

Table 5.9: Competence of the Project Management Team

Team Competence Level	% of Projects
Novice	6%
Advanced Beginner	2%
Skilled	42%
Expert	46%

Most of the project work (59%) was conducted internally, while 41% was contracted out. The distribution of projects possessing a conflict management strategy or the lack thereof was around 50/50. Where 50% of the projects said that they had a conflict management strategy and 49% said that they did not, 1% of the projects did not provide an answer.

Further analysis of the data reveals that 49% of the projects surveyed do not have a conflict management strategy when the business goal is operational (for 53% of the data).

5.6 Data Analysis Using Leximancer

In this section I present an analysis of the qualitative data gathered using our survey instrument. For reasons explained in Chapter 4 the data was parsed using the Leximancer software package, which performs unassisted lexical analysis of data using a thesaurus based search. Results from Leximancer are exhibited and explained next.

5.6.1 Conflict Drivers

Questions 17, 18, and 19 of the survey instrument inquired into the drivers of project conflict & negotiation. Although the respondents were asked what they considered to be the top five conflict drivers in their projects, but due to the open-ended nature of the question I received a large variety of answers. Using Leximancer I was able to narrow down the results to 8 drivers, the output from Leximancer is exhibited in Figure 5.2. Please note that node size is representative of the driver's prevalence within the data, whereas the lines connecting the nodes represent the interconnections amongst the concepts.

Although, Leximancer's graphical output is helpful in making some sense of the data, however many fine details may be hidden within the diagram therefore to

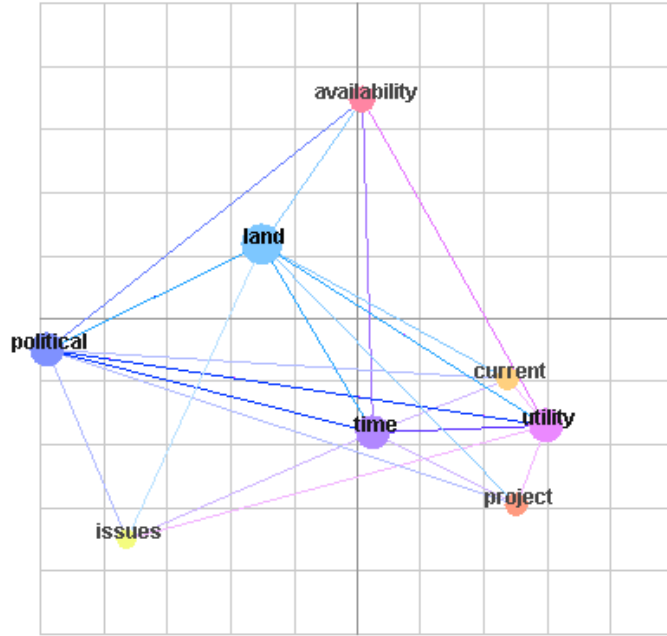


Figure 5.2: Top Conflict Drivers in Projects

explore the data further I turn to the verbose output produced by Leximancer. Conflict drivers and their prevalence within the dataset is exhibited in Table 5.10.

Table 5.10: Drivers of Project Conflict and their Prevalance

Prevalence	Conflict Drivers
High	Land
	Political
	Time
	Utility
	Availability
Low	Issues
	Project
	Current

The top five reasons for conflict found in the dataset according to Leximancer are: land, political, time, utility, and availability. Unfortunately, these categories do not make much sense in the manner they are presented i.e. as words plucked directly from the text and require significant explanation to make their meaning apparent. The following discussion is provided to clarify the nature of each of the five conflict drivers mentioned above.

1. **Land:** Refers to land related issues associated with large scale government run projects such as highways, roadways, irrigation canals, and dams etc. A variety of conflicts stem from land related issues such as those arising from the use of pressure tactics, materializing in the form of: work stoppages; delays

in making decisions; or artificially created labor shortages, leveraged by tribes for bigger gains (in the form of compensation or employment opportunities for their group members).

2. **Political:** Refers to several types of conflicts stemming from politics in practice and at times political malpractices. These include political pressures imposed on the project by ministerial position holders from within the Government. Political pressures include changes to the scope of work or requests for bribes and other forms of payments to government representatives.
3. **Time:** Refers to time related issues within the project. Shortages of labor and raw material, or non-payment / delays in payments, or lapses in funding affect the time to complete a project.
4. **Utility:** Refers to the lack of facilitation being provided by utility supply companies to the project. Consequences include lack of electrical supply or gas required by the project to complete the project work. Other examples include the unwillingness of the utility companies to allow project work easement rights and access to the utilities infrastructure.
5. **Availability:** Refers to the unavailability of resources and funds to complete the project work; these resources can include raw material or manpower and may also include the unavailability of money to conduct further work.

Other drivers of conflict identified by Leximancer include issues, project, and current. Issues by itself is not a driver of conflict, instead it refers to a variety of issues that occur within projects; most of which are covered by the conflicts drivers explained above. Issues include technical, manpower, political, financing, bribery, political unrest etc. Similarly project is identified by Leximancer as a driver of conflict however, it is actually the activities constituting a project within which conflicts are enacted and negotiations take place. Current refers to the current law and order or war conditions within the areas where some of the projects are being conducted. These contribute to the lack of safety and security of the project personnel to the unavailability of raw material and manpower. Current situations also have a detrimental effect on the cost of labor and material which leads to issues and conflicts pertaining to escalation – a subcomponent of project cost related conflicts.

The relationship amongst the drives of conflicts discussed above can be visualized as shown in the Figure 5.3. The figure shows that issues with utility companies and political powers have a great impact on project completion time. Availability of raw material and manpower also has an impact on time but to a lesser extent. The availability of resources is affected to an extent by the political agenda of parties in whose area projects are orchestrated. Conversely, low availability of material may prompt political issues to arise within a project. Land related conflicts are in direct relationship with availability or access to the land and this lack has an effect on the progress of the project with respect to time. Lastly the current law and order situation in the region has an overall impact on all projects.

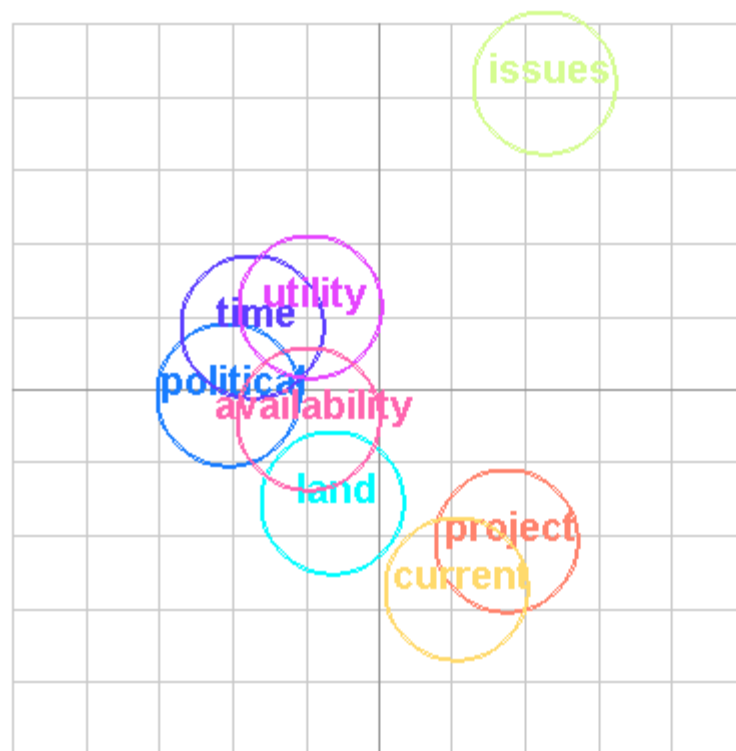


Figure 5.3: Relationship between the Conflict Drivers

5.6.2 Project Behavior in Situations of Conflict

Questions 20 through 24 inquired into the behavior of project's under situations of conflict. The respondents were asked to describe how their project's behavior differs when it is experiencing conflict. Responses received in response to this question were processed using Leximancer. Figure 5.4 shows that the most prevalent attribute of projects experiencing conflict is slowness. I will now examine the same data with the data points at smaller theme sizes to see what other patterns emerge.

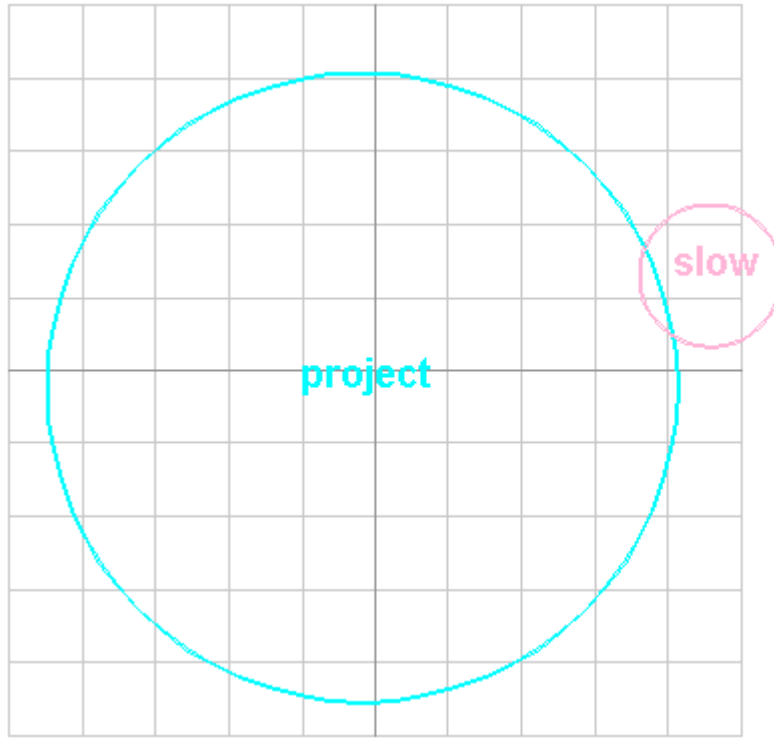


Figure 5.4: Project Behavior During Situations of Conflict

Figure 5.5 shows the dataset discussed above broken-down by smaller sized themes, thereby revealing more details regarding a project's behavior when it is experiencing conflicts. We can see that the dominant behavior or characteristic of a project in conflict is one of slowness, this is captured by the occurrence of themes such as slow, stopped, and delay. An examination of the verbose output from Leximancer pertaining to the 'changes' theme indicates that these changes are to the mood and behavior of the project team or to the behavior of the outside parties involved in the project.

Other themes of project behavior in conflict were also identified; however, they are not self-explanatory and need to be elaborated. I explore the thesaurus compiled by Leximancer for the words contributing to these themes and explore their use within the naturally occurring text presented to the software for analysis. These themes are project, work, and conflict.

1. **Project:** Refers to the delays in the project work – these may lead to stop-pages of work or prevent the team from meeting their targets, changes to project plans, and labor shortages – caused by labor movement to neighboring countries for better pay. Some consequences identified by Leximancer are, a negative effect on group cohesion and reduced team productivity.

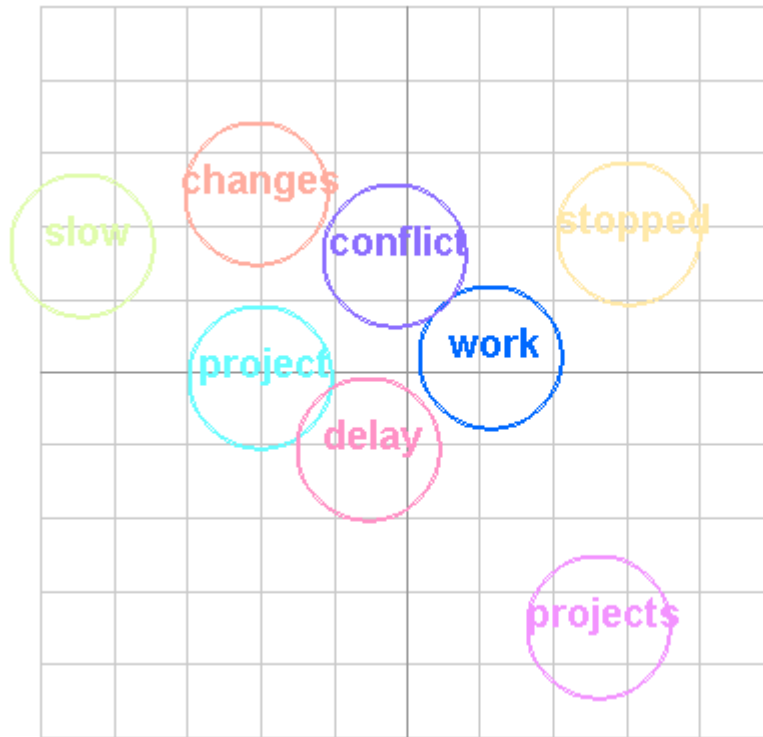


Figure 5.5: Project Behavior when Experiencing Conflict (Smaller Theme Sizes)

2. **Work:** Refers to the delays in achieving project targets.
3. **Conflict:** Refers to the conflicting behavior of project team members that emerges as a response to field issues (such as delays and price increases).

In question 22, I asked our respondents to provide a list of words that best describes a project undergoing conflicts and negotiations. Their responses were analyzed and the following graphic was generated using Leximancer see Figure 5.6.

From the vocabulary of words used by the respondents to describe projects in conflicts or negotiations the following themes emerged. These represent the best description of a project undergoing conflicts and negotiations. The themes are presented below according to the frequency of their occurrence within the data in descending order, these are:

1. Challenging
2. Time – used in the context of ‘time consuming’ or ‘waste of time’
3. Delay – as in ‘project work is delayed’
4. Difficult



Figure 5.6: Words Describing Projects Undergoing Conflict & Negotiation

Questions 23 and 24 inquired from the respondents whether there is a pattern to the behavior of projects when they are experiencing conflict & negotiation; 62% of the respondents answered in the affirmative while 37% reported that they did not find a pattern in their projects. Those answering in the affirmative were asked to clarify what patterns in the project's behavior they had observed, their answers are presented below.

1. **Conflicts:** Refers to representation issues of the parties involved in the conflicts; conflicts due to the slow pace of projects; conflicts stemming from estimation of material and cost; conflicts related to financial issues; conflicts stemming from selection of labor and material; wage issues; and conflicts related to technology being used on the project.
2. **Problems:** Refers to involvement of incorrect ministries on the project; time to finish the project; gender issues; and issues related with the unavailability of labor and material and also their rates.
3. **Time:** Refers to time related issues pertaining to the completion of tasks and the project as a whole.

4. **Work:** Refers to work related issues such as the stoppage of work; de-motivation, un-satisfaction, & irritation of the team members involved; difficulties in completing the work on time; and lack of quality in the work performed.
5. **Environment:** Refers to the external environment within which the project operates and the affect it has on the project. This entails factors such as labor and material supply; cost of material and labor; and the project conflict mediation methods used in the region such as the *jirga* and the difficulties it creates for the project.
6. **Completion:** Refers to the conflicts pertaining to completing the project or its targets on time.
7. **Behavior:** Refers to improper or un-facilitating behavior of the parties involved because of a feeling of misrepresentation within the project negotiation process.

For a graphical representation of these patterns see Figure 5.7, the larger circle, labeled ‘project’, refers to patterns of behavior occurring within the project undergoing conflicts and negotiations. These behaviors are occurring mostly due to the interaction of the project with its environment and community, represented here as a smaller circle.

In questions 25-28 the respondents were asked if they were currently working on or have worked on a project which posses a heterogeneous cultural makeup and whether a project that was culturally heterogeneous experienced conflicts differently than those that were culturally homogenous. 37% of the respondents said they were or had worked on a project with a heterogeneous cultural makeup, whereas 62% responded that they had not worked on such a project.

Most of the respondents identified the cultural makeup of their projects as comprised of Pakistanis or as ‘Pathans’ – a regional culture, dominant within the region where the survey was conducted. A few projects had other cultures such as Americans, Bangladeshis, Indians, Saudis, and Afghanis working on them. Further more, 60% of those surveyed revealed that reflecting against their experience they believed that culturally heterogeneous projects experienced conflicts & negotiations differently as compared to culturally homogeneous projects. While, 29% did not

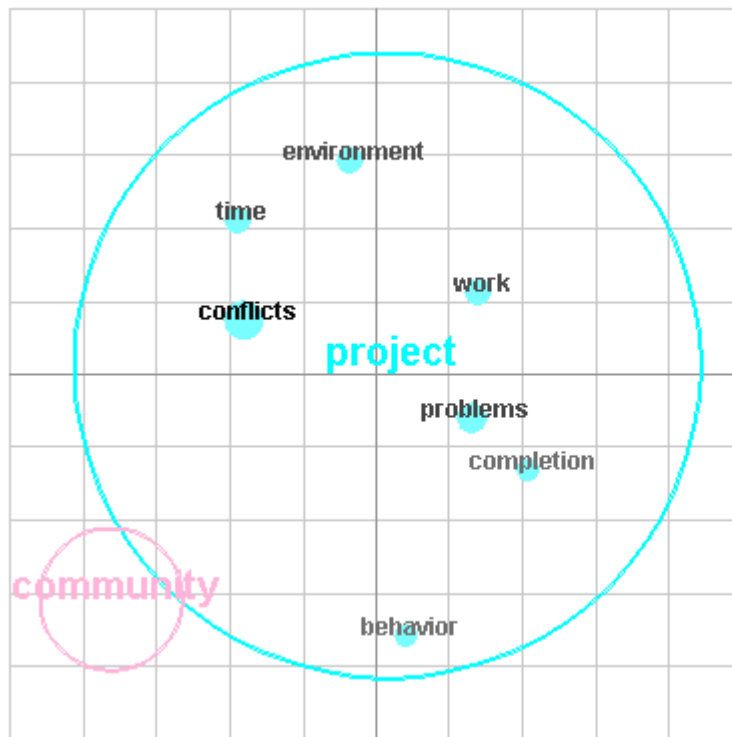


Figure 5.7: Patterns in Project Behavior When Experiencing Conflict & Negotiation

see a difference between how these projects experience conflicts & negotiations; the remaining 10% of the respondents did not answer the question.

Further queries from those that found a difference between culturally homogeneous and heterogeneous projects revealed the following pertaining to how these projects experience conflicts and negotiations.

Our survey respondents identified a number of characteristics regarding how a culturally heterogeneous project experiences conflict & negotiation differently than a culturally homogeneous project. Answers provided by the respondents were processed using Leximancer, however the categories formed by the software based on the data were too numerous and therefore unhelpful in explaining precisely the difference between the project. Several combinations of terms and thematic abstractions were tried however the categories created were still not very informative and a considerable degree of overlap was observed between the themes. I attributable these issues to the quality of answers received, an overuse of certain words within the naturally occurring dialog, and a lack of certainty within the respondents as to what differentiated their culturally heterogeneous projects from other culturally homogeneous projects.

Figure 5.8 below exhibits the categories identified using Leximancer, the dominant categories are represented by node of slightly bigger sizes – an examination of the thesaurus formed by Leximancer for each category revealed that several of these were not categories at all and some identified as dominant categories such as ‘face’ had only one instance that too was referring to something other than what can be inferred from its name.

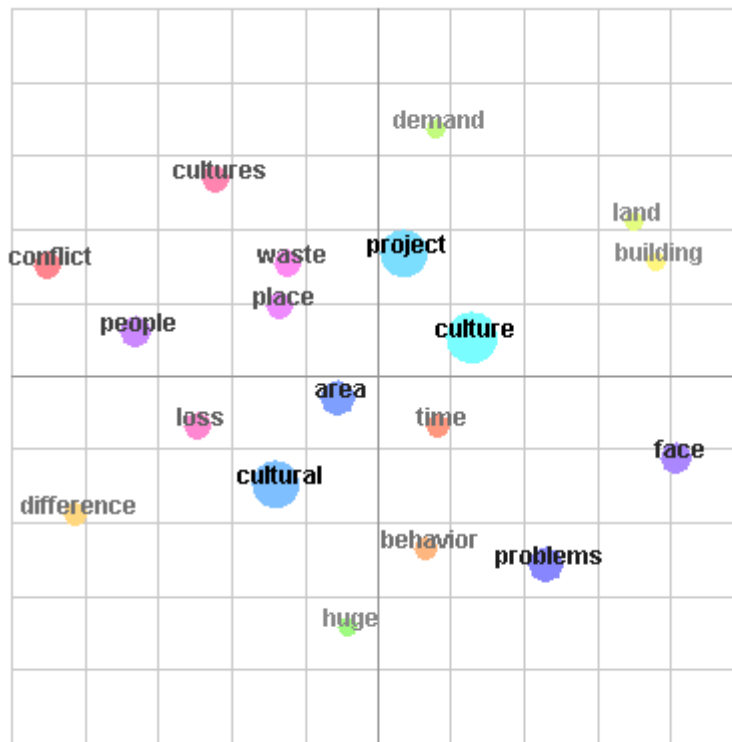


Figure 5.8: Behavior of a Project During Conflict & Negotiation: Case of Culturally Homogeneous Projects

I therefore turn to the two biggest categories after ‘project’ i.e. ‘problems’ & ‘culture’ and examine the terms used in the narrative to describe a culturally heterogeneous project experiencing conflict & negotiation. The terms used against each theme are:

1. **Problem:** stress; lack of acceptance by the beneficiary; complicated; need for different conflict and negotiation skills; need for better defined policies and procedures; power distances; culturally grounded interpretations; gender issues; requires an emphasis on maintaining trust; military culture supersedes local culture; language differences; locals not accepting of the project; need for extra money, effort, and time.

2. **Culture:** perspectives; different work ethic/perceptions/expectations; different mindsets; cultural affinities and jealousy; varied project related requirements; beneficiaries not accepting the project results; differences in achieving objectives; complex negotiations; male/female cultures; time/space orientations; longer time to complete the project; negotiations are difficult and a waste of time; gender issues; trust; and greater resistance to the projects.

In questions 29 and 30, the respondents were asked what they did prior to engaging in a negotiation activity and then what negotiation techniques were used when they finally do engage in a negotiation. The responses received to the first question were analyzed using Leximancer, the result is shown in Figure 5.9, please note that prevalence of a theme is related to the size of its node.

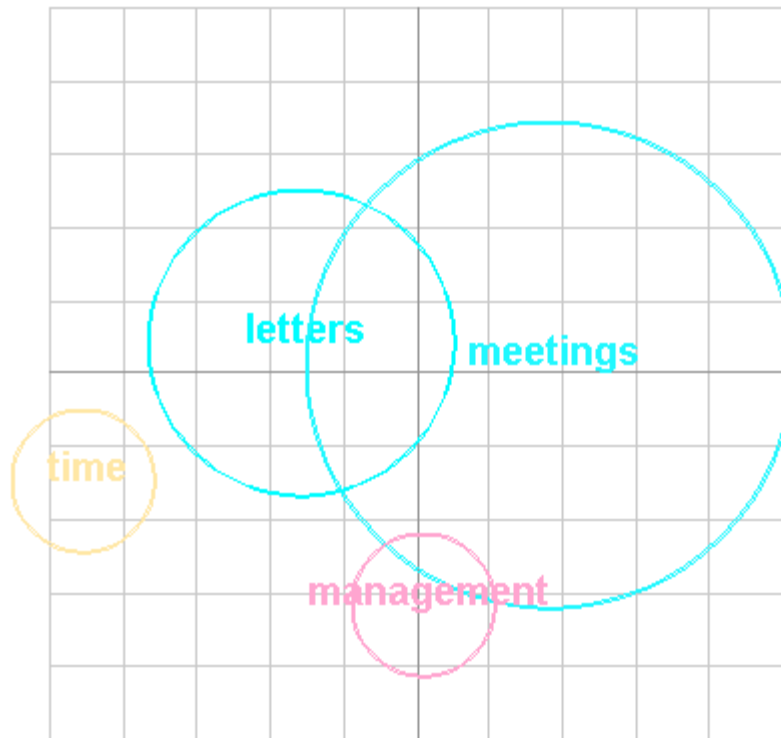


Figure 5.9: Project Behavior Prior to Embarking on a Negotiation Activity

The four themes identified in Figure 5.9 are described below:

1. **Meetings:** Refers to listening to the other party; meeting with them face-to-face; calling them via telephone.
2. **Letters:** Serving notices; issuing orders to terminate the contract; written warnings; asking for written explanations; issuing letters to the appropriate ministries.

3. **Management:** Sitting with the project manager and upper management and defining the boundaries of the negotiation; negotiating only if the upper management feels we need to negotiate.
4. **Time:** Giving time to the other party involved to prepare for the negotiation; making plans for managing the effects of the negotiation process on the time of the project; setting a timeframe for the negotiations; agreeing to a negotiation timeline.

The next inquiry further focused on the negotiation phenomenon. We asked the respondents what negotiation techniques they used during their projects. Responses received were passed through Leximancer, results are displayed in Figure 5.10.

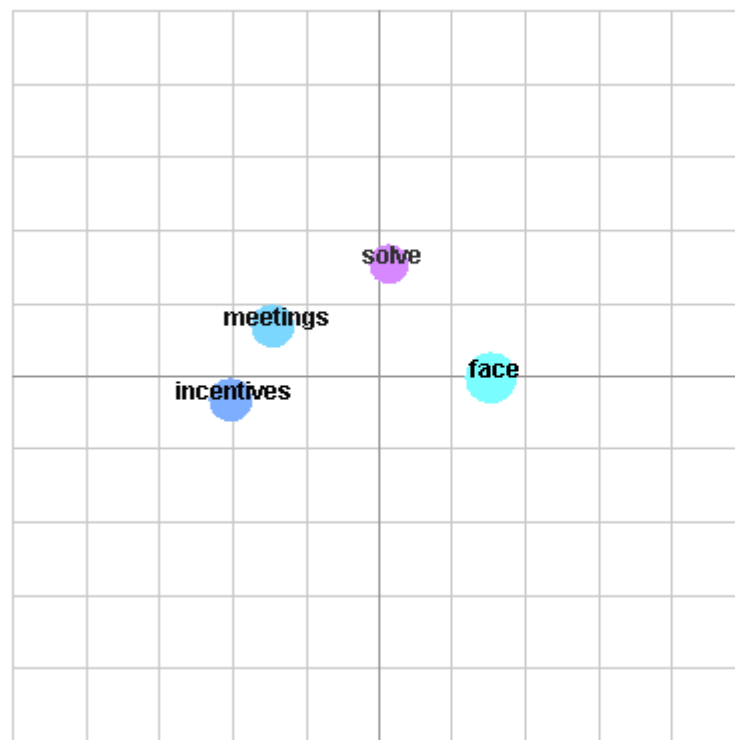


Figure 5.10: Negotiation Techniques Employed by the Projects

Explanations of the negotiation techniques used by the projects surveyed are as follows:

1. **Meetings:** Refers to the face-to-face meetings between the parties in conflicts. These meetings are normally formal in nature.
2. **Incentives:** Refers to incentives offered to the other party to win their favor or agreement. Most projects referred to offering cash incentives termed packages and employment opportunities.

3. **Face-to-Face:** Refers to the dominant style of negotiation within the region i.e. meeting with the other party in person, the face-to-face negotiation may be formal or informal.
4. **Solve:** Seeking out win-win solutions; listening to each other's points of view without prejudice; compromising; making an offer and expecting commitment; arbitration (*jirga*); offer packages; offer incentives; involve the political administration; retreats; lower profit margins.

In question 31 I inquired if the projects had a conflict management strategy. Out of the 86 qualified responses received, 50% of the respondents indicated that they had a conflict management strategy, whereas 49% did not have a strategy. Next I wanted to know what conflict management strategies were being used by the projects that responded in the affirmative. Our analysis reveals that the following conflict management strategies are in use by the projects surveyed, these are listed in order of prevalence:

1. **Project:** Refers to the project level strategies, these include identifying the project conflict domain and then exercising judgment calls in resolving the conflicts.
2. **Parties:** Refers to parties involved in conflict to actively seek out a solution to the conflict. Conflict management strategies includes meetings, face-to-face interactions, and 'jirgas'.
3. **Government:** Refers to involving the appropriate ministries or political administrations for help in solving the conflicts.
4. **Alternatives:** Refers to seeking out alternatives to the issue on which the conflict has occurred or looking for alternatives which would lead to an agreement.

The relationship between these conflict management strategies is displayed in Figure 5.11.

Alternatively I wanted to know what the projects not having a conflict management strategy did in the presence of conflicts. Responses received to this question were processed using Leximancer, result is displayed in Figure 5.12.

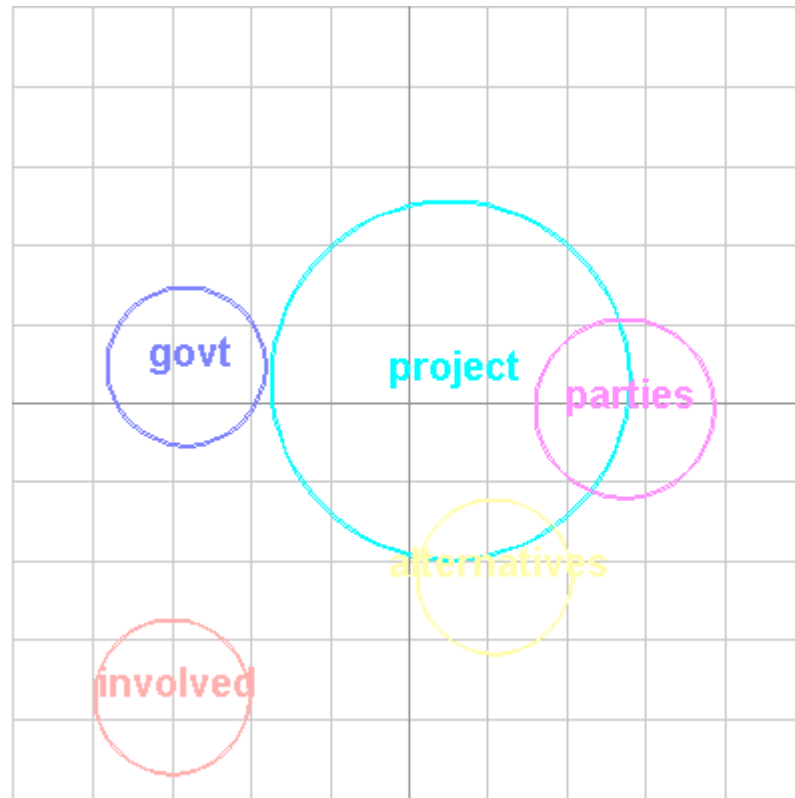


Figure 5.11: Conflict Management Strategies Deployed During Projects

It was found that projects not having a conflict management strategy have a tendency to follow an ad hoc approach to conflicts as they arise. Most conflicts are responded to in a reactionary manner and each conflict is treated as unique, this is represented by the word ‘depends’ in Figure 5.12. The themes ‘strategies’ should be ignored, as its existence in the figure is a result of the use of the combination term ‘conflict strategy’ by our respondents and does not represent anything meaningful over and above what is covered by the theme ‘conflict’. The term ‘negotiate’ refers to ‘face-to-face’ meetings (i.e. confronting), which is the most prevalent negotiation technique used by the projects surveyed.

It is interesting to note that projects not having a conflict management strategy were responding to every occurrence of conflict within the project. Whereas projects having a conflict management strategy were more selective in when and how it choose to conflict or negotiate.

5.7 Conclusion

The discussion contained in this chapter has presented the results of a survey of 86 project personnel representing 73 diverse projects from 73 different organizations

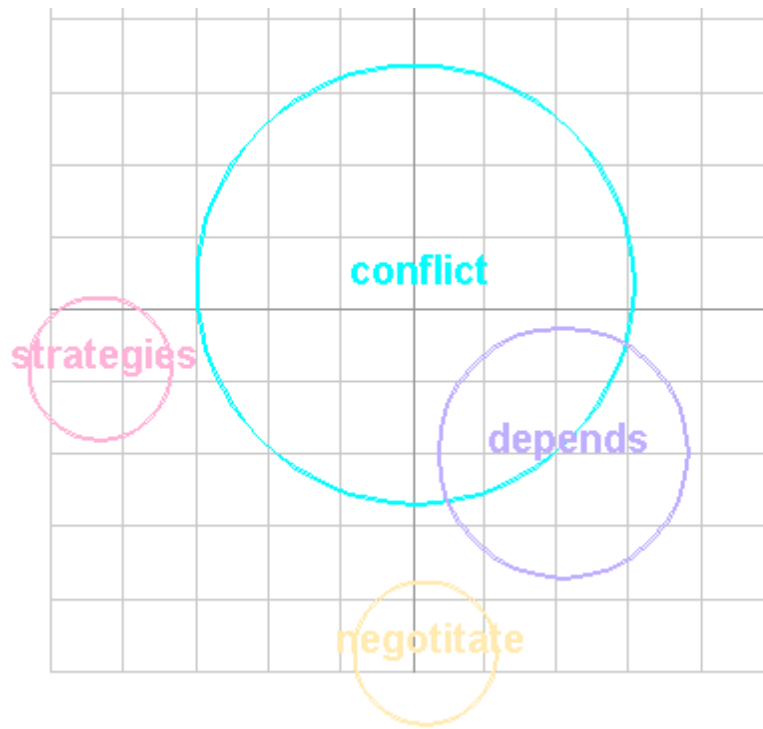


Figure 5.12: Project Responses in Conditions of No Conflict Management Strategy

conducted during the first half of 2010. Implementation of the survey represents the execution of the first phase of this research study. The results discussed in this section therefore establish the groundwork based on which the second phase (i.e. case study methodology) of the study will be erected. The next step is to orient the case study by producing a list of checklist questions (see Appendix G for inquiry during the case study implementation).

Chapter 6

Analysis of Case Study Data

6.1 Introduction

Findings presented in this chapter are based on data collected during the summer of 2010, following the implementation and analysis of survey data collected earlier during the spring of 2010. Data was collected from project personnel on nine projects; the underlying project selection criteria have already been discussed in Chapter 4. Projects discussed in this chapter, their distribution according to levels of structural complexity and expected conflicts is presented in Table 6.1.

Table 6.1: Typology of Projects

		Structural Complexity		
		High Complexity	Medium Complexity	Low Complexity
Task Conflict Intensity	High	Dam Extension Project Small Dams Project Dam Maintenance Project Campus Construction Project		
	Medium		Vocational Education Program Mining Project	
	Low			Lollywood Docudrama Lollywood Horror Movie TV Serial Production

Our case study data is collected from three sets of projects that are categorized according to the levels of their structural complexity and expected task conflicts.

It is important to mention that within the projects included in our case study some (i.e. the small dams project, dam maintenance project, vocational education program, and mining project) are located in the Federally Administered Tribal Areas (FATA) of Pakistan, which is comprised of 7 tribal agencies (or districts) and 6 frontier regions. These areas are situated just east of the Durand line, which demarcates the boundary between Afghanistan and Pakistan. The FATA are distinct from

the rest of the country in that they follow strict tribal laws and do not adhere to the national laws of Pakistan. A key factor differentiating the tribal based projects from other projects is that they adhere simultaneously to tribal and national laws. This is because they are orchestrated by organizations located in settled areas but the project work-sites are located in the FATA. Details on the projects are provided in Sections 6.2, 6.4, and 6.6

We follow a consistent structure through this chapter. The chapter consists of three parts in accordance with the three categories of projects described in Table 6.1. Each part consists of a section detailing the background of the projects it includes and is followed by an analysis of the data collected. The project description sections sequentially present project related information such that first a table outlining the basic characteristics of the project, followed by a brief description of the projects based on the responses of the different project protagonists interviewed, and concludes with a graphic depicting the difference between a project's perceived complexity (from the perspective of those interviewed) against the average complexity of similar projects (derived from the data contained in chapter 5) in the region. The project description section is followed by a section presenting an analysis of the data collected from the projects.

6.2 Project Backgrounds: High Structural Complexity/High Task Conflict Projects

The discussion contained in this section is based on data gathered from four publicly funded projects that have a high level of structural complexity and high number of expected task conflicts. This section follows the presentation logic explained in Section 6.1. The complexity diamonds average is based on data from 35 projects (consisting of 27 constructions, 4 energy, 2 irrigation, and 2 engineering projects), extracted from Table 5.2, plotted against the project-management-team's perceived complexity of each individual project under consideration.

6.2.1 Dam Extension Project

Table 6.2: Characteristics of the Dam Extension Project

Factors	Characteristics
Setting	Urban
Governance	National Law
Source of Funding	Public
Work Completed (at the time of data collection)	80%
Work Contracted Out	100%
Project Budget	\$1.25 billion (US)
Number of Project Team Members	24
Number of Contractors	5 Large Scale Contracting Firms
Project Status	Late
Project Financial Status	Overrun
Sector	Construction

The dam extension project proposal was accepted by the government on 30 September 2002 and was initiated based on an agreement signed between the governments of Pakistan and an independently governed state under the control of Pakistan. The scope of this project is two fold: To extend the water reservoir's capacity & hydroelectric production capacity of an existing dam, and to compensate, either financially or through repatriation, those affected by the dam. Out of the project budget of \$1.25 billion, \$0.162 billion are for the dam extension, \$0.635 billion are for payments and package deals for the affected, and the remaining \$0.453 billion are allocated for the construction of roads, bridges, and agricultural canals.

The project team on this project consists of a Resident Engineer, a Construction Manager, a team of mechanical and electrical engineers, a staff of project accountants, and several administrative personnel. Due to the magnitude and variety of the work there are four large contractors employed to do the work, these contractors have in turn hired their own sub-contractors. Two teams of contractors on the project are non-native, consisting of a Chinese team responsible for the engineering of the dam extension and a German team responsible for the electrical and mechanical work. One contractor is working directly under the Chinese and German teams, while two contractors are working independently on the roads, bridge, township, and canal system construction.

The project has gone beyond its time baseline; at the time of the data collection for this study the dam extension component of the project was 90% complete,

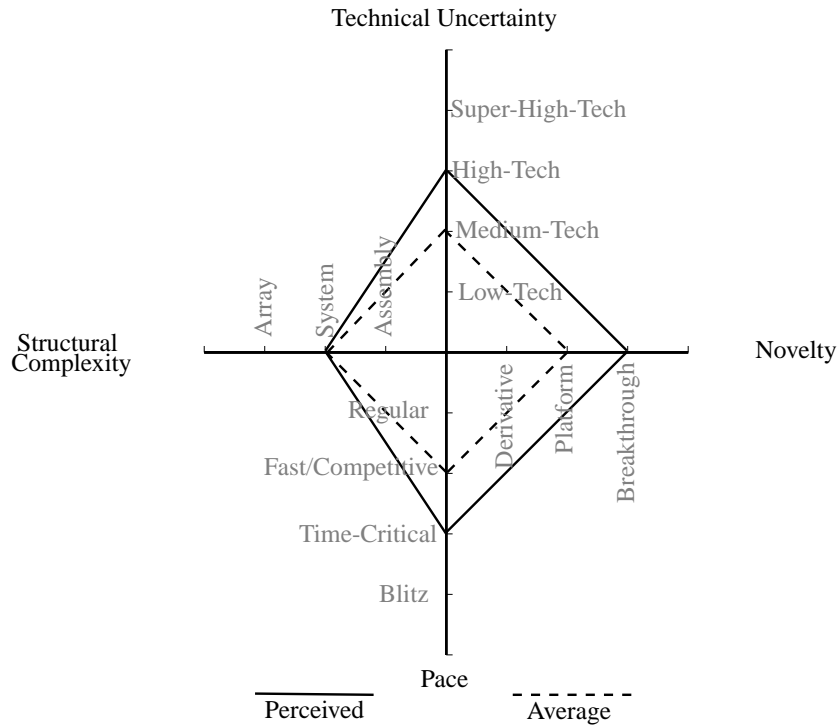


Figure 6.1: Complexity Diamond: Dam Extension Project

whereas the overall project was 80% complete. A key contributor to the project delay is the slow pace of work on the preparation of the township and associated infrastructure for the repatriation component of the project. Documents reveal that due to the delays, inflation, and increasing cost of land, cost of the repatriation effort is expected to increase by 92% and cost of payments to the affectees of the original dam construction is to increase by 129%. A figure exhibiting the difference between the perceived project complexity by the project team versus the actual (average) complexity of projects in the region is provided in Figure 6.1.

6.2.2 Small Dams Project

This project is concerned with the building of stone filled and earthen dams for irrigation. The dams are located in the Federally Administered Tribal Areas and Frontier Regions (FATA/FR). Since the project inception in 2007, 7 dams have been constructed. At the time of the interview 1 dam had just been completed, 1 dam was reaching 65% completion, and 25 other dam projects were either in the feasibility or design phases. 100% of the work was contracted out to local firms hailing from the region where the projects are located. The project personnel on this project consist of a Manager, Assistant Manager, Project Director, and Accountant. The project

Table 6.3: Characteristics of the Small Dams Project

Factors	Characteristics
Setting	Rural (remote area)
Governance	Tribal Law
Source of Funding	Public
Work Completed (at the time of data collection)	65%
Work Contracted Out	100%
Project Budget	\$5.88 million (US)
Number of Project Team Members	5
Number of Contractors	1 for each dam
Project Status	Late
Project Financial Status	Overrun
Sector	Construction

budget is \$5.88 million for the completion of 13 dams during the 2009-2010 period, with the dam presently under construction constitutes \$0.529 million of the total.

Additionally data was also gathered about a small pilot project entailing solar energy provisioning to a village of 15 households with no access to the national grid. This project was in the maintenance phase at the time of the interview and had been completed at a cost of \$0.058 million, whereas connectivity of the same village to the national grid would have cost \$0.3 million. At the time of writing this report a project to connect an additional 12 villages using solar and wind energy has been approved and is presently underway. A figure exhibiting the difference between the project teams perception of the complexity versus the actual (average) complexity of projects in the region is provided in Figure 6.2.

6.2.3 Dam Maintenance Project

This dam is located at the intersection of two different FATA agencies; part of the dam (the grid station and offices) is located in one agency, while the dam itself and river (including reservoir) are located in another agency. Therefore, the tribal law governs much of the working of the dam, such as in hiring contractors or labor etc. The dam was originally built between 1955 and 1960 and has been in operation since Dec. 1960.

One of the key concerns pertaining to the dam is its diminishing utility both in terms of electricity production and reservoir capacity. The dam is in a continuous state of maintenance due to particle damage to the hydroelectric power generation

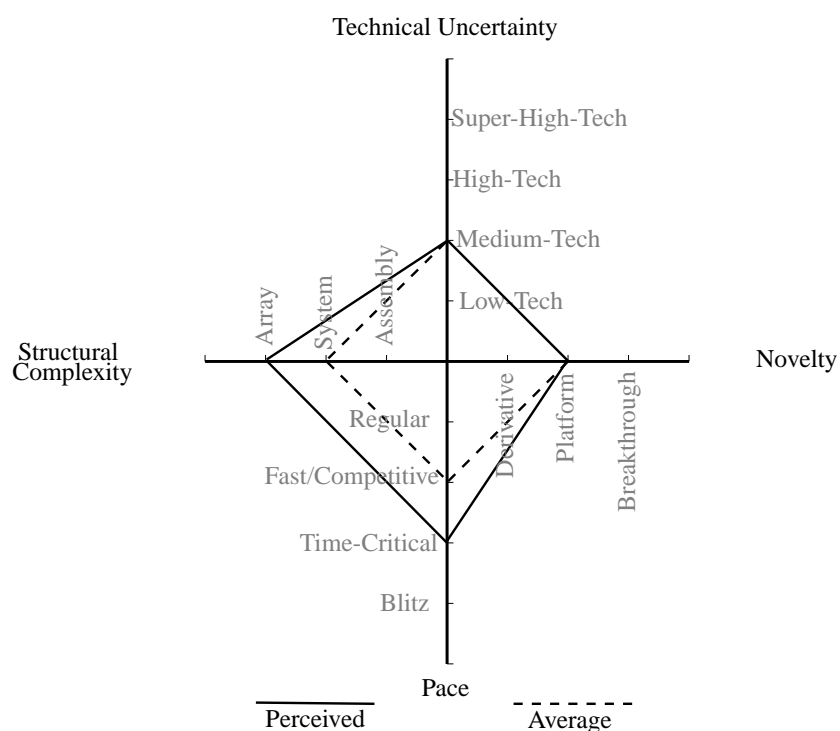


Figure 6.2: Complexity Diamond: Small Dams Projects

Table 6.4: Characteristics of the Dam Maintenance Project

Factors	Characteristics
Setting	Rural (remote area)
Governance	Tribal Law
Source of Funding	Public
Work Completed (at the time of data collection)	100%
Work Contracted Out	0%
Project Budget	\$0.592 million (US)
Number of Project Team Members	4
Number of Contractors	None
Project Status	On time
Project Financial Status	As Expected
Sector	Construction/Mechanical

equipment and spillways and the presence of Alkaline Aggregate Reaction of the type Alkaline Silica Reaction (AAR/ASR) contributing to the physical movement of the dam infrastructure. Each maintenance cycle begins in October and must be completed by April the following year. This is because demand for electricity in the region begins to increase from mid-spring onwards to the end of summer. During the maintenance cycle several activities are performed, including the repair of turbines, patching of spillways & tunnels, and repairing damage done by the AAR/ASR.

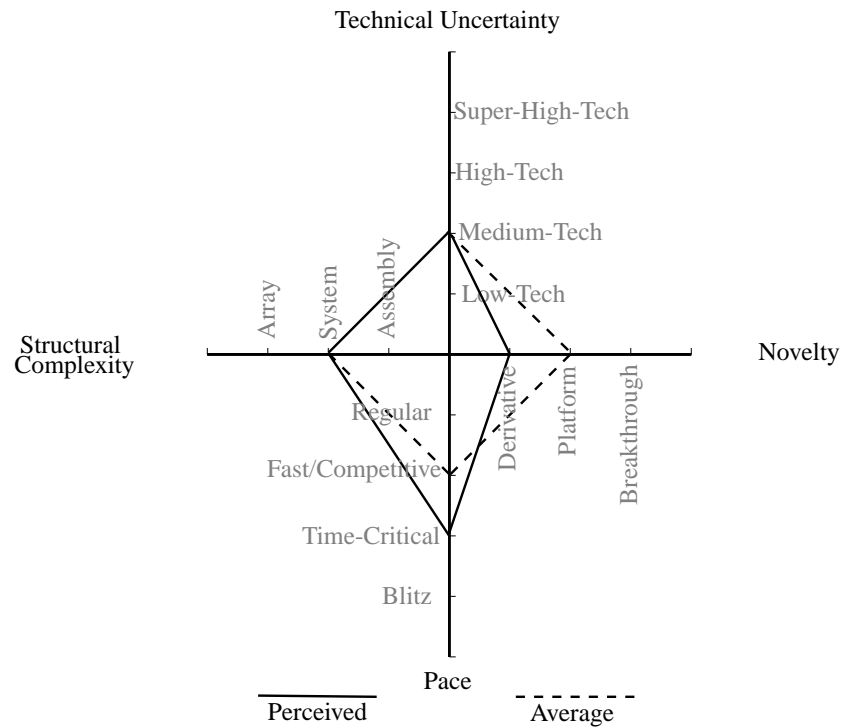


Figure 6.3: Complexity Diamond: Dam Maintenance Project

The cost of the maintenance project is \$0.592 million; the maintenance team comprising the project includes 46 individuals who work in shifts of three, where each shift engages 10 to 12 workers. At the time of equipment disassembly the entire team is engaged. Additional staff includes 12 workshop workers (CNC mill operators) and 4 welders. The project management team consists of 2 civil engineers (concerned with the infrastructure component of the project) and 1 mechanical engineer (concerned with the power generating equipment). A Resident Engineer who reports to the Chief Engineer oversees the project. All the work on the project is performed in house, with 0% sub-contracting. Additional labor requirements are also fulfilled internally by utilizing manual laborers on the dam payroll or by hiring day laborers from the local tribes.

6.2.4 Campus Construction Project

Table 6.5: Characteristics of the Campus Construction Project

Factors	Characteristics
Setting	Urban
Governance	National Law
Source of Funding	Public
Work Completed (at the time of data collection)	95%
Work Contracted Out	90%
Project Budget	\$5.24 million (US)
Number of Project Team Members	4
Number of Contractors	4
Project Status	Late
Project Financial Status	As Expected
Sector	Construction

The Higher Education Commission of Pakistan and Pakistan Planning Commission approved the campus construction project in 2005 and work was initiated in October 2005. Project approval was granted in the form of two separate projects (both headed by different project managers) the first of which was completed in the summer of 2008. The second half of the project termed the ‘mega project’ is valued at \$5.24 million and consists of three components: Civil works, human resource development, and IT infrastructure. The mega project began in the fall of 2007. The civil works component of this project consists of construction of an 118,000 sq. ft. academic block; a 2500 feet length boundary wall; a 20,000 gl. capacity elevated water reservoir; 4 kilometers of sewerage and drains; and driveways. The human resource component includes 29 overseas scholarships for doctoral studies abroad. The IT infrastructure project includes the networking of all the hostels and academic block. Included in the IT infrastructure project are cabling, development of the backbone servers, implementation of distribution hardware, and an extendable IP telephony exchange. The civil works component of the project was completed with a time overrun of 6 months (however, the reason for this being that the university decided to occupy partially completed premises and construction work had to be slowed down to minimize disruption to the ongoing academic activities).

The IT infrastructure component of the project conversely experienced delays due to delays in the building construction and due to objections raised by the HEC pertaining to the high-end equipment requested by the university, resulting

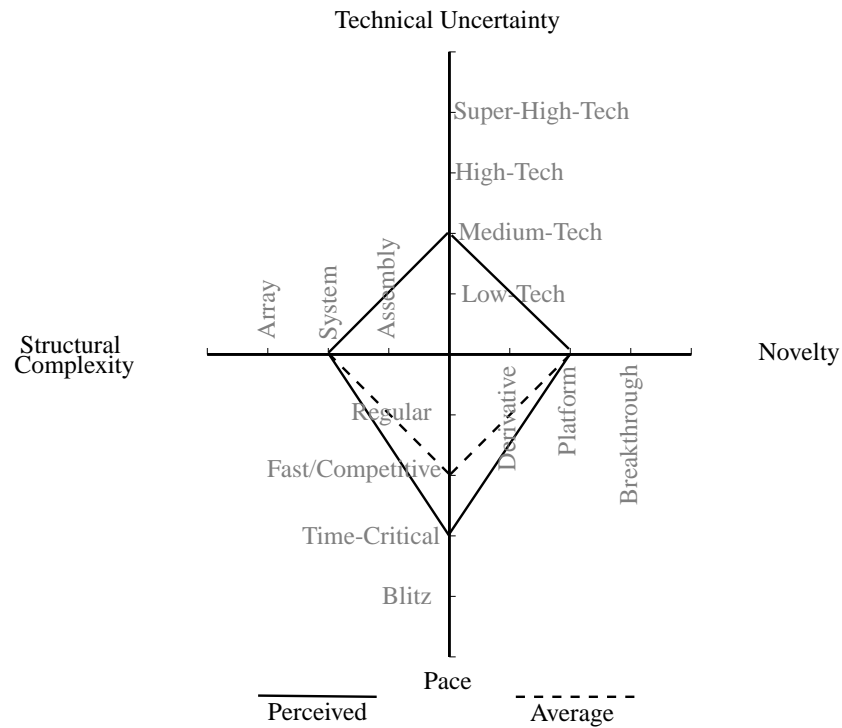


Figure 6.4: Complexity Diamond: Campus Construction Project

in scope changes. The amended proposal was accepted in March 2011 and tender was awarded to a contractor, who started work in May 2011. The IT project has been completed and after undergoing testing in June 2011 was put in operation.

The human resource development component of the project was initially for 29 scholarships however due to later cuts by the government to the Higher Education Commissions budget only 25 scholarships were awarded and the remaining 4 scholarships were revoked. Work performed during the project execution was 100% contracted out. The project staff consists of 1 project director, 1 project accountant, and 2 resident consultant engineers. Figure 6.4 exhibiting the difference between the projects perceived complexity versus average complexity of projects in the region.

6.3 Data Analysis: High Structural Complexity/High Task Conflict Projects

Data contained in this section stems from implementation of the case study protocol discussed in Chapter 4. The narrative provided below results from data collected from four projects, as well as a government owned contracting firm, and a tribal elder; the reason for their inclusion is discussed next.

The reason for interviewing the tribal elder was that despite the claims by several interviewees that conflicts in the FATA/FR were handled via negotiations with the tribal elders, it was found that, none of those interviewed had ever participated in these negotiations, nor were they able to identify a person within their project (i.e. the dam maintenance project, small dams project, mining project, and vocational education program) who actually represented the project during these negotiations. Therefore, it was felt that a tribal elder should be consulted to ascertain whether negotiations with the tribes actually were taking place, as claimed, and to capture their insight into the negotiation process.

A senior representative of the government owned contracting firm was interviewed as some interviewees from the small dams project had indicated that it represented the project during negotiations with the tribes. Therefore, it was important to understand their role in project conflict & negotiation. The government-subcontracting firm's regional office was contacted to capture the interviews of middle management and project workers working for the firm. Unfortunately, a few days after scheduling an interview with the regional manager I was informed that he had died. Requests to schedule interviews with other staff of the subcontracting-firm were denied until the appointment of a new manager. After waiting two months for the manager's position to be filled, and considering the time-constrained nature of this study, the prospects of interviewing more persons were abandoned.

Data gathered from the government-subcontracting firm's representative and tribal elder was processed similar to other interview data and introduced into the analysis to aid in building explanations. In order to maintain traceability of data through the section and to prevent needless in-text repetitions, a code is assigned for each project, see Table 6.6.

Table 6.6: Codes Assigned to Projects

Project	Code
Dam Extension Project	DE
Small Dams Project	DS
Dam Maintenance Project	DM
Campus Construction Project	CC

Interviewees from each project are identified through a coding scheme, see Table 6.7, where the project code precedes a unique number identifying each interviewee (e.g. DS-1, refers to respondent 1 from the Small Dams Project).

Table 6.7: Interviewee Codes and Positions Held within the Project Hierarchy

Interviewee Code	Position Held	Interview Duration
DS-1	Assistant Manager	90 min
DS-2	Project Director (PD)	90 min
DS-3	Deputy PD	45 min
DS-4	Project Accountant	90 min
DS-5	PD Alternative Power	20 min
CC-1	Project Director	90 min
CC-2	Assistant PD	60 min
CC-3	Project Accountant	90 min
DM-1	Supervising Engineer (Civil)	2.5 hrs
DM-2	Supervising Engineer (Mechanical)	2.5 hrs
DM-3	Resident Engineer	90 min
DE-1	Construction Manager	90 min
DE-2	Deputy Construction Manager	60 min

Additionally, ancillary interviews with the government contractor and tribal elder are coded as GC-1 and TE-1 respectively and were each 60 minutes in duration.

6.3.1 Answering Research Questions 1 & 2

The underlying objective of research questions 1 & 2 it to inquire into the drivers of project conflicts & negotiations, to determine how projects behave in their presence, and to identify any patterns of behavior. Due to the intertwined nature of responses to research questions 1 & 2 answering them separately does not make sense, therefore the discussion presented in this section answers both.

Please note that the labels used in this section are derived from the results of this study's survey implementation (see Chapter 5). As explained in Chapter 4, these labels form the themes of exploration during the case study implementation. In seeking detailed explanations and live examples of these themes it was found that one category label (i.e. 'current situation') from the survey was referring to the type of conflict rather than its cause and therefore needed to be elaborated further. Therefore, in keeping with the critical realist orientation of this study (discussed in Chapter 3), and as proposed in Chapter 4, these themes were recast to refer to

the underlying conflict driver instead of its topical manifestation. In so doing if a suitable categorical label was available in the literature then it was used. In cases where no categorical label was available in the literature, then an appropriate label that best described the underlying cause of conflict was formulated, these labels include: pilferage, cheating, and law & order. The categorical labels used, the subsections where they appear, and a brief explanation of each is presented in Table 6.8.

The following subsections are based on themes identified in Table 6.8, each is structured so that evidence from all four projects is presented to explain, describe, or elaborate on the cognitive and causal mechanism in play during the projects. This is followed by the presentation of a causal map, which presents graphically the links between the different concepts extracted from the data. One causal map is presented per theme rather than per project as it facilitates in converging evidence from the various data sources.

Table 6.8: Aligning Survey and Case Study Data Categories

Categories found through survey data analysis	Categorical labels used in this section	Label Marker Assigned	Explanation
Land	Land Access	A	Land Access is a categorical label used to refer to conflicts stemming from access to or use of land under the ownership of a party other than the project principal.
Political Pressure	Political Pressure	B	Political pressure refers to conflicts arising due to the use or misuse of political force exercised by those in power.
Time	Time	C	Time refers to time related issues plaguing projects and the conflicts it gives rise to.
Utility Providers	Utility Providers	D	Refers to conflicts arising due to a lack of facilitation offered by various utility companies interacting with a project.
Availability of Resources	Ability of Resources	E	Lack of availability of resources refers to conflicts arising due to a scarcity of labor, raw material, or money.
Other Issues	Policies	F	Refers to conflicts arising due to a clash between organizational policies and procedures and project needs.
	Money & Quality	G	Money refers specifically to financial concerns stemming from slow release of project payments, project funds, or escalation claims. Quality refers to quality issues between the project principal and its contractors.
Current Situation	Pilferage	H	Refers to conflicts arising because of theft of project property or malicious damage of the project infrastructure for illicit gains.
	Cheating & Bribery	I	Cheating refers to conflicts arising because of attempts by the contractors or tribes to cheat the project principal, whereas bribery refers to conflicts arising due to illicit solicitation of bribes during the project lifecycle.
	Law & Order	J	Refers to conflicts driven by the existence of extraordinary circumstances due to the ongoing war on terror in the region.

(A) Land Access

As explained in Table 6.8, land is a categorical label that refers to a variety of conflicts arising from or culminating in some sort of conflict related to land access. These issues may take a variety of forms, such as disagreements over incentives offered to those affected by the projects or to those whose land or other resources are used by the projects.

DS-1 and DS-2 provide an example, of a conflict situation arising between the principal and local tribe over the method used in offering a beneficiary tribe a package deal. The tribes are aware that they benefit differently depending on the compensatory method used by a project. Thus conflict is created by the tribes waiting to acquire as much benefit they can from the project and the project's desire to reduce their costs. This is clarified by the statement below:

[DS-1 & DS-2] *Payment is 6.25% of project cost to the tribe or compensation for land per 'quam' or individual. We prefer the 6.25% as it's simpler but our executive body prefers the second option, as it's cheaper. The tribe knows it will benefit more if they go for the 6.25% of the project budget. This gives rise to conflicts, as they negotiate for the higher margin option. [Note: 'quam' refers to a smaller cross section of a tribe, large tribes are composed of many smaller 'quamoonas' (pl. of quam)].*

Thus, we have the tribe favoring a particular payment option that is opposite to what the project organization wishes to use. Additionally, there is strife between the project team and project organization who too do not agree to the same mode of payment. The reason why the project team favors a different payment option to its organization is that going along with what the tribe demands is a simpler and quicker course of action. The tribes, on the other hand, prefer a different payment mode as it seeks to increase all possible revenue streams.

Although, a tribe benefits greatly if a project is undertaken in its area (through employment opportunities and other benefits from the projects), they attempt to maximize the receivable benefits. One way the tribe achieves this is by deploying delay tactics:

[DS-1 & DS-2] *[The tribes] refusing to allow access to the site if not dealt with, therefore the project cannot start.*

This in turn necessitates negotiatory engagement between a project principal and tribe. As a rule, direct negotiations with the tribes are not allowed, rather a

federal government officer administering the tribal locality, called a Political Agent (PA), engages in the negotiations on the government's behalf. This is ratified in the interviewee's response.

[DS-1 & DS-2] *Negotiations are held through the political agent in the form of a 'jirga'. [Note: A jirga is a gathering of tribal elders].*

However, the task is not simple:

[DS-3] *... tribes demands are time consuming to respond to and address, to an extent the PC-1 addresses this issue [referring to provisioning of packages], but the negotiations drag on for a long time... when a jirga is called they can ask for anything they can think of, so a lot of convincing and negotiating has to be done.*

It would be helpful here to explain the concept of a *jirga* in some detail, the following explanation was provided by a tribal elder (TE-1) who is the head of his clan and has participated in numerous gatherings of the elders.

[TE-1] *A 'jirga' or meeting of tribal elders and parties in conflict is a tribal practice and is evoked as a mechanism to resolve both social and administrative issues. Social jirga's are one-time meetings of the parties in conflicts, however administrative jirga's can meet on the same issue multiple-times and are not limited by a time period. The underlying concept of the jirga is that the parties in conflict must come to a mutually agreed decision and the jirga does not disassemble until an agreement is reached. The decision reached by the jirga is considered final and binding on both parties, a violation of which by either party is a 'call-to-arms' and a punishable offence. Punishments can be in the form of financial retribution, public humiliation, confiscation of property, and even death; and are therefore taken very seriously. The jirga is presided over by the tribal elders, called 'speen-giree' [literally, white-beards i.e. elders], of good moral character and holding a position of respect amongst their tribes. Both parties hold an equal position within the jirga and no party is considered subservient to the other. Any disrespect shown to the other party or to the 'speen-giree' is not tolerated and matters under consideration are decided in the favor of the non-offending party.*

The explanation provided above illustrates the use of a traditional conflict resolution process to mitigate a conflict between two key project stakeholders.

Personnel of the campus construction and dam extension projects made no mention of a *jirga*; this is possibly because these projects are not located within the FATA/FR regions. Interestingly, the repatriation component of the dam extension project uses a conflict resolution mechanism somewhat similar to the *jirga* called a *panchayat* (literally translated means 'gathering of five'). Although there are no

tribes residing in the project locality, several *panchayat* meetings were held between the displaced locals and the repatriation authority.

All the FATA/FR located projects mentioned the *jirga* as a conflict resolution tool, however none of the persons interviewed had attended a *jirga*. They all referred to other senior members of the project, or contracted consultants, or persons from the head offices as the actual operatives during a *jirga*.

[DS-3] *No we don't engage in the jirga, those are held at the time of drafting the PC-1 by the consultants.*

[DM-1 & DM-2] *Several jirgay (pl. of jirga) have taken place over the last 20 years... we haven't been to a single one, I think the resident engineer attends these.*

Similarly, DM-3 (the resident engineer) said that he too had never attended a *jirga*; however, he clarified that there were trained personnel at the headquarters for this. A senior member of a government contracting organization, GC-1 also indicated that he had never attended a *jirga* and pointed to the Political Agent (PA) as the person responsible for orchestrating the *jirga*. The PA was unfortunately not interviewed during this study therefore his role in the *jirga* is accepted as described.

One respondent in summarizing his experience with project conflicts suggested that contractual breaches were the most common driver of project conflicts and that these manifested in the form of financial conflicts.

[DS-3] *Conflict for us arises when a contract is violated... most conflicts revolve around money.*

Money was a concern identified by another project, however from a different perspective.

[DM-1 & DM-2] *Lack of money is a key driver of conflict within the projects; this is mostly an interdepartmental concern though.*

A causal map of the data discussed thus far is presented in Figure 6.5, which presents a graphical representation of how land access acts as a driver of project conflict & negotiation.

(B) Political Pressure

Political pressure from lobbyists and other political entities were brushed aside when enquired into. One project member abruptly rejected the issue as soon as it was raised however, further inquiry revealed the following:

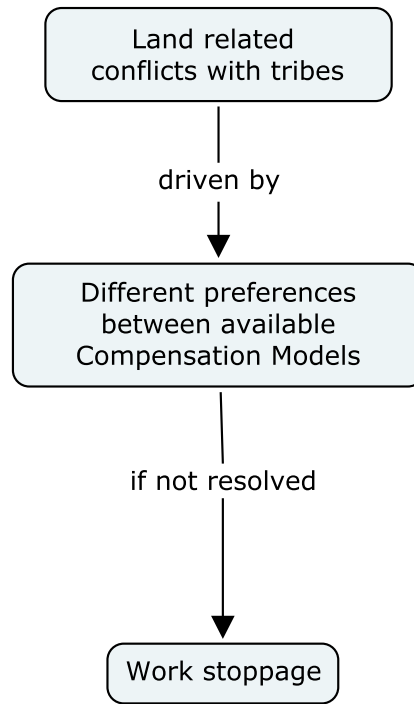


Figure 6.5: Causal Map of Land Related Issues as a Driver of Project Conflict & Negotiation

[DS-3] ... *but that's at the main office level; we just do the work that is assigned to us. We as a team don't engage in projects due to political pressures, we do what is feasible and do-able... there are no compromises.*

While on another project political pressure was acknowledged as arising from the office of the Political Agent (PA) or the project superiors who are expected to act according to law but at times do not, causing concerns for the welfare of the project. An interviewee explained how this affected the project:

[DM-1 & DM-2] *System is trust driven, so they are expected to act in the interest of the project... violations of this trust means we get poor quality contractors who will perform poor quality work by performing our work in less cost.*

On probing further, the interviewees elaborated on the type of pressures that they experienced during the project.

[DM-1 & DM-2] ... *takes the form of direct orders or offers of better incentives and at times even direct threats. Not bowing to the pressure can result in transfers to other sites, cuts in pay and promotion, and cuts in benefits.*

The frequency of such occurrences is high and has a negative consequence on the project as denoted in the following statement.

[DM-1 & DM-2] *Official answer ‘this doesn’t happen’ ...unofficial answer ‘happens more frequently than I care to remember’...waste of time, resources, and taxpayers money.*

A causal map of political pressures as a driver of project conflict & negotiation is presented in Figure 6.6.

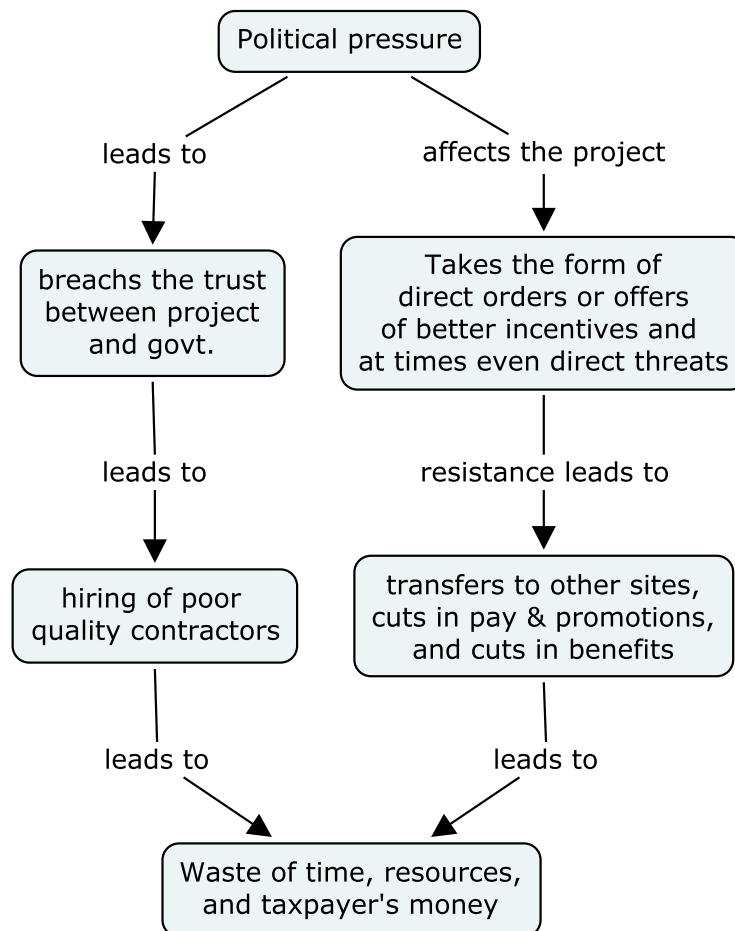


Figure 6.6: Causal Map of Political Pressure as a Driver of Project Conflict & Negotiation

(C) Time

Conflicts related to a project’s time schedule could have different causes. As an example, one interviewee related the story of an ongoing tussle between a contractor and taxation authorities. On the surface it seem to be a conflict extraneous to the project, arising from a legal dispute. However, further questioning reveals that the dispute is artificially created and the legal issue is a farce, staged in an attempt

to pressure the contractor into paying bribes. The affected party in this case is innocent and not guilt of any wrongdoing.

[DS-1 & DS-2] *One contractor of ours is in dispute over income tax. . . He is from FATA but his NIC [National Identity Card] shows that he is a resident of Peshawar. . . We sided with him against the income tax department, he actually is from the FATA/FR and the Political Agent (PA) of the area too has certified his residency. He, like many others, has a NIC showing a Peshawar address, but that doesn't mean he has abandoned his residence in FATA/FR. . . this case has taken a longtime to resolve, the tax department has taken him to court over this and his case is still under consideration there. They are just harassing him. . .* [Note: Not a court in the true sense of the word but rather a tribunal]

In this instance the harassment has a possible consequential effect of creating delays in the project schedule. Our interviewees, continuing in an empathic tone, expressed this as problematic to the project.

[DS-1 & DS-2] *. . . slow pace of work as now he has to spend time and money hiring a lawyer and appear in court to defend himself rather than working on the project.*

Consequentially, if the delays continue and the schedule is not maintained, the interviewees perceive that they will have a conflict to resolve. This example illustrates a possible conflict instigator and highlights the need for conflict prevention measures. Although, the interviewees were keeping a close watch over the case they did not have a strategic plan in case the project schedule was violated due to delays.

Other schedule delays are caused by late release of payments (discussed above) or slow pace of negotiating access with the tribes, which hinders the project teams (both contractor and principal) from visiting the site.

[DS-3] *Access to the site is negotiated via the consultant(s) in collaboration with the Political Agent (PA) before the project begins.*

However, it seems that this is not always the case.

[DS-1 & DS-2] *Workers can't get to the site, as the PA was slow in doing his work for us. . . [name removed] sometimes doesn't resolve the access issues on time with the tribes.*

Elsewhere, the PA is slow in provisioning security for the project team and this affects monitoring visits.

[DS-1 & DS-2] *PA slows work for us, as he sometimes doesn't resolve the issues on time, he doesn't provide security when we need to visit the site.*

A causal map of time as a driver of project conflict & negotiation is exhibited in Figure 6.7.

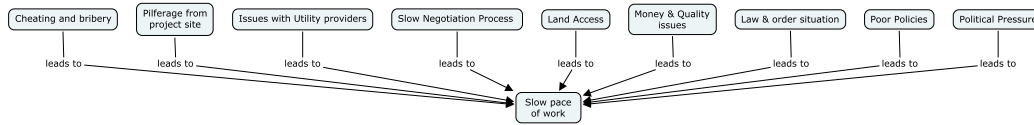


Figure 6.7: Causal Map of Time as a Driver of Project Conflict & Negotiation

(D) Utility Providers

Conflicts with utility providers were the fourth most frequent conflict experienced by the projects included in our survey. However, I found that, within the case study projects included in this section there were limited conflicts. Only one project reported any concerns arising from their interactions with a utility provider. Interestingly, the case study projects that did not report any utility provider related conflicts were either utility providers themselves or were located in remote regions where the utility providers had no presence. This by no means implies that conflicts with utility providers is not of significant concern, it just implies that it is of a lesser concern to the type of projects included in our case study.

The only example I have, came from the campus construction project where the project personnel during the initial stages of the project execution had conflict with the electricity provider. The issue driving the conflict, as explained, was a simple one entailing the installation of a high capacity transformer and an industrial electric meter for the campus. However, even after several requests and visits to the office of the superintending engineer (SE) of the utility company, the project staff did not succeed in getting their meter and transformer installed. The project staff first attempted to put pressure on the SE, however that had an opposite effect and introduced further delays into the project. The matter was resolved only after ‘under the table’ dealings.

[CC-2] ...he ended up stiffening up and refused to budge. First he wanted us to put in a new application, and then he wanted guarantees on stamped papers [a type of headed paper used for legal purposes in the region]...we gave in to everything he demanded but he still didn't provide what we needed. Putting pressure on him from up top was not a wise move; he was now trying to ignore us and was refusing to meet with our staff. Finally, we had to find a person who he was obliged to and ended up paying a sum of money and taking him out for dinner to get the work done...after the meeting the task that took us two months was done in a day. We still invite him to all our company dinners just to keep him happy.

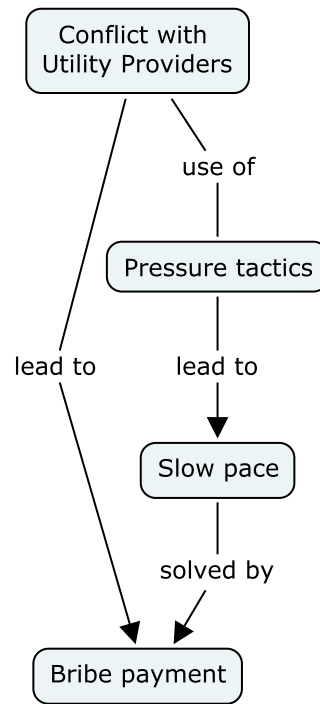


Figure 6.8: Causal Map of Utility Providers as a Driver of Project Conflict & Negotiation

Conflict within the scenario above begins when the utility company representative stopped responding to the projects requests. In this case the exercise of power by the project personnel, directed at forcing the utility company representative resulted in giving rise to a relational conflict.

Although, the example above could be placed in the cheating and bribery subsection however, as it is the sole example of problems experience during a project due to its interaction with a utility provider it is displayed here and a reference to this section is included in section ‘i’. A causal map of utility providers as a driver of project conflict & negotiation is exhibited in Figure 6.8.

(E) Availability of Resources

Raw material availability is greatly affected by road blockages and curfews in the project area or along the connecting roads, these affect the project by:

[DS-1 & DS-2] ... *leading to delays in work, however we are flexible with our schedule and are concerned with getting the job done.*

However, surprisingly the project manager was not concerned about these delays. The attitude seemed to be more of empathy and understanding and the approach

more flexible considering the reality and understanding of the environment where the project is located.

Elsewhere, the project team was more involved and acted to eliminate the stoppage of material to some extent; thus entailing an additional level of negotiation for the project staff arising due to the current law and order situation in the area. The example below pertains to how the lack of availability of resources caused by extant conditions in the project environment give rise to a need to negotiate.

[DM-3] ...we have to constantly negotiate with the army to accompany our material to the site or need to ask them for permission to let our transport through...at times there is nothing that can be done and the material sits there exposed until the situation gets better.

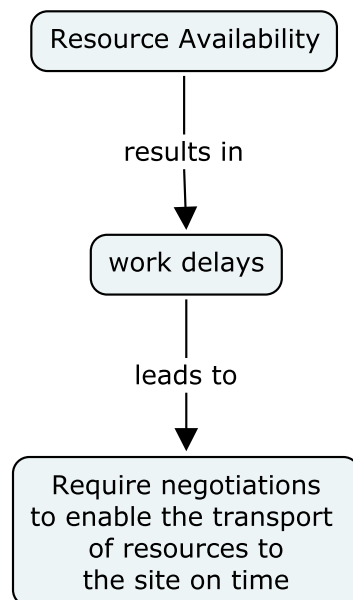


Figure 6.9: Causal Map of Resource Availability as a Driver of Project Conflict & Negotiation

A causal map exhibiting the role of resource availability in driving project conflict & negotiation is exhibited in Figure 6.9

(F) Policies: Intra-Organizational Processes

Intra-organizational processes were also identified as driving conflicts within the project. The example cited below provides a glimpse into how these conflicts play out and what the project management team does in order to keep their work going. The situation described is of a contractor who has completed a task and submitted

the necessary reports and invoices; however, despite being approved by the project manager there were payment related issues:

[DS-1 & DS-2] *... releases of payments are slow from the main office... causes the contractor to suffer and results in slow work... sometime money is released but the contractor can't collect it because his movement is restricted by the law and order situation.*

The example above exhibits how intra-organizational policies are a cause of delay in the project. It is interesting to note that in this case the intra-organizational process itself is not a direct cause of conflict. Rather, conflict is created because of the delays that the process introduces to the project workflows. A project accountant expressing his frustration stated:

[DS-4] *We have a well-defined process here; the PD gives me bills, sanction letters, contracts, and agreements and I prepare the case for him. This is then sent to the chief for approval, who marks the file over to the GM finance, who hands it over to the section officer. Now if the section officer has a problem the file has to come back to me through the same hierarchy. The sanction officer is a 'ranker' and doesn't understand how crucial time is to a project, so he will do typical bureaucratic things to delay things, like ask for performance reports... he has to show his boss that he is doing productive work somehow... problem is there is no right forum where I can bring this up... these formalities are killing our projects. Their attitude is who cares about your progress, all we care about is our documentation'.*

Therefore, conflict exists between the project and the project's principal organization due to a difference in how payments are processed and how the project staff would like them to be processed. The example above is of a task conflict.

To counter the effects of delays in payment releases the project team resorts to adopting a precautionary approach.

[DS-1 & DS-2] *At times we prerelease [i.e. release funds to the contractor prior to receiving formal approval from the project's principal organization] money so work can go on.*

One reason for pre-releasing funds is:

[DS-4] *Timely release of funds is a financial concern for the project. Fund usage is actively tracked during the monitoring and control audits.*

These interviewees argued that certain policies defined by the parent organization do not seem to work well for projects. Thus, giving rise to task related conflicts and goal conflicts within the projects. An example presented during the interviews was

of a case where the interviewees were traveling to a project site, but along the way they ran into road closures. In this example the task-conflict arises as a result of the project's principal organization's reimbursement process and the project's requirement of ensuring timely monitoring and control.

[DS-1 & DS-2] *...we had two options, either to return to the office or take a detour and visit the site. We opted for the detour and travelled an extra 700km to arrive at the site. Upon returning we filed for a refund of the bus fare, however the finance office has refused to release the payment...from the onset we were attempting to keep the cost of the visit low and therefore had opted to take a bus. We could alternatively have flown to and hired private vehicles to visit the site from there or driven to the site with our official driver and government car; the cost of either of these two options would have been much greater than the \$14 per person we have spent. Now, it seems we are going to be paying out of our pocket for doing the project's work.*

On another project a lack of cooperation between the functional departments of the organization was presented as a cause of delays and much frustration for the project. The example below is of a displaced conflict on the CC project. Respondents from the CC project had indicated to us that they had experienced multiple conflicts with their IT department in the past. The example below exhibits how these past experiences give rise to arguments over secondary issues (in this case lack of cooperation).

[CC-1 & CC-3] *IT department is very slow, I don't know any IT and have to rely on them for help but they don't take anything seriously. They keep delaying things, don't show up for meetings, and are not interested in what goes wrong with the project because of them...all I needed was a 1 page document from them, kept asking them for 3 months but they wouldn't cooperate. Finally I had to write it up myself, but then they complained that I had asked for the wrong equipment...they don't have to help me, I know it's not their job, but the project affects them eventually and if they get the wrong items it is they who will suffer...you would imagine they would learn, they did the same thing with the other PD and he ended up writing them a proposal that didn't meet their needs, now I am here fixing that mess too.*

While on another project interdepartmental processes were blamed for the financially weak position of the project. This too exhibits a case of displaced conflict within the project.

[DM-1 & DM-2] *...we are always strapped for cash. The department doesn't provide all the funds necessary for the maintenance work...we have a \$0.002 per unit production cost and \$0.017 is charged on each unit consumed for dam maintenance the remaining per unit cost is profited to the company, but we don't even get the maintenance money that we charged the consumer...someone*

in Lahore [i.e the city where their headquarters is located] tells us you've this much money to do the work... they have never seen the site, don't know how much work needs to be done, how can they say how much it would cost...

The financial troubles of the projects were explained by an interviewee as a result of the government's policy of limiting the control of the project manager over the project's finances.

[DE-1] *...there were significant revisions made by the government, the book of financials in 1960's reduced the role of the project manager to that of a decision maker and lessened his control over the project finances [i.e. the control over a projects finances resides with the project's principal organization and not the project manager]. This means that as the project manager I have to constantly fight for the project's funds with the finance departments... they have a different way of working and are not as time bound as the project, this causes undue delays in the payment releases... the contractor can stop work if payment is not made to him on time.*

Another project suffered an artificially created shortage of resources due to restrictive demands placed by the funder (in this case the government), causing a delay in the project. The example below exhibits a task conflict.

[DM-4] *The funding body placed lots of arbitrary demands on the project; these are difficult to fulfill. As an example, they required that a certain number of vehicles be used during the project and not more, even though it's not possible to conduct the project work with such limited resources. This naturally is a cause of delay to the project... we've tried several times to convey this and similar other concerns to them but they won't listen... they think we are not doing the work on purpose, so they pressure us more; whereas the work was not possible in the limited resources in the first place. Eventually they do listen, but the flexibility and understanding needed at the beginning of the project comes much later.*

The respondent blamed this issue on the principle organizations policy of going along with the sponsors demands, knowing full well that these demands are unrealistic.

A causal map of policies as a driver of project conflict & negotiation is exhibited in Figure 6.10.

(G) Money & Quality

Raw material costs often increase (referred to as escalation) during a project, due to factors such as inflation and resource scarcity. In the government sector projects, there are inbuilt mechanisms in contracting documents that allow for escalation on

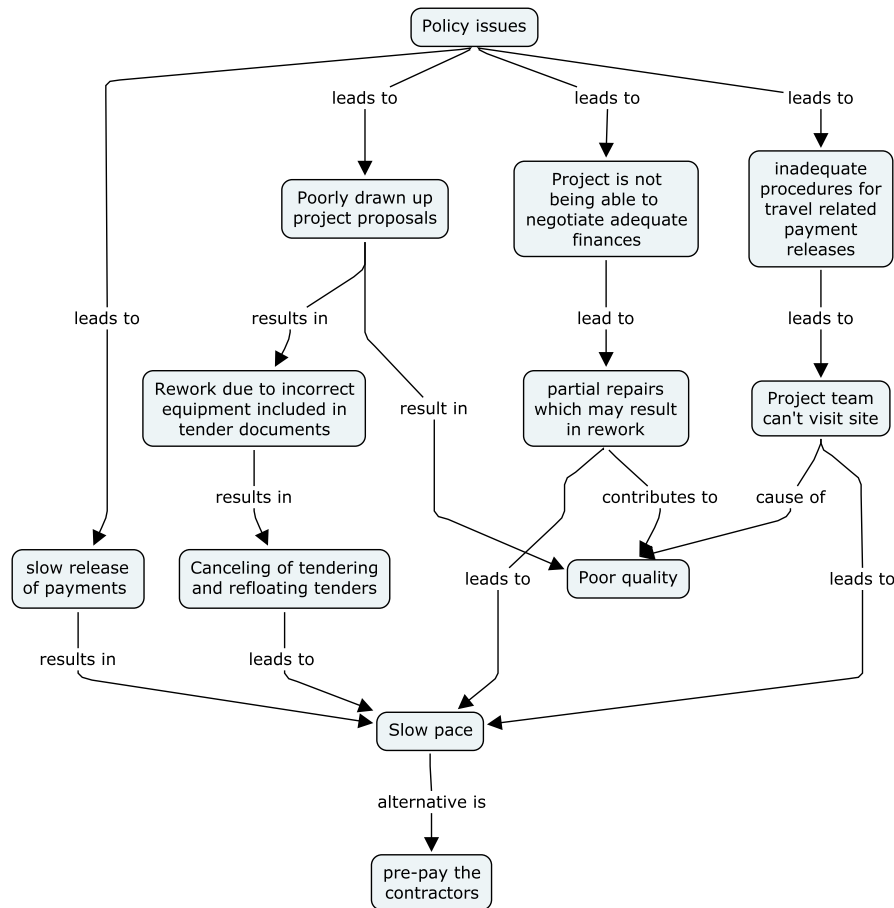


Figure 6.10: Causal Map of Policies as a Driver of Project Conflict & Negotiation

specific items i.e. gasoline, cement, labor rates, and rebar; a request for escalation on any other item is not considered. An unusual challenge to the project due to its geographic location is increasing transport costs, not because of increases in gasoline prices or its lack of availability, but rather due to an increase in the transporters' risk premium.

[DS-1 & DS-2] *Transport costs are increasing, because they [transporters] are taking a risk of travelling in an insecure area. They can lose their trucks or worse, their lives.*

These increases are not covered by contractual clauses that are escalation related. However, the contractors continue appealing in the hope that their requests will be considered. The project however is bound to follow the government rules and rejects all such requests.

[DS-1 & DS-2] *We follow the PEC prescribed contracts; increase in transport prices is payable only if the fuel rates increase. Here the fuel rates are stationary... the eligibility for escalation is not satisfied.*

The rigidity demonstrated in DS-1 & DS-2's statements pertaining to escalation and quality of work are offset by an attitude of facilitation and teamwork where the contractor needs access to certain equipment. Implying that the relationship is not adversarial in nature.

[DS-1 & DS-2] *... our contractors are competent we don't have any technical issues with them. ... at time they need some heavy equipment and other specialized machinery, which we help them acquire from the market.*

Resultantly, the cost of material used by the project is higher, and with the project principal refusing to offset these costs, the financial losses are transferred to the contractor. The contractor consequently attempts to cover the added costs by deploying cost reduction mechanisms. One method is to purchase cheaper material of lower quality.

[DS-1 & DS-2] *... contractor buys lower quality products [referring to raw material] in an attempt to save money on site. ... Yes, they do this regardless of escalation issues but the amount of lower quality products on site increases whenever an escalation case is rejected by the competent body.*

Purchase and use of lower quality raw material is acceptable to a certain level; there seems to be a tolerance threshold of the project management team, which when crossed results in the matter being taken into notice. There is greater tolerance towards cosmetic faults but no tolerance on the dam structure itself.

[DS-1 & DS-2] *... improper concrete mix used by the contractor is not acceptable at all. I will not tolerate core defects or compromise on structural safety. If the dam fails tomorrow because its structure was not done right, I will lose my reputation as an engineer.*

Violations are subject to rework, which is imposed through ongoing audits of the project work. Identified rework needs to be carried out by the contractor and further payments are not released until the rework is satisfactorily completed.

[DS-1 & DS-2] *Poor quality results in stoppage of payment; we stop payment [to contractor(s)] when we see poor quality.*

In another project the quality concerns arose because of the project principal's decision to occupy completed portions of an under construction building whilst work continued on other floors. The contractor therefore relaxed his work quality and citing premature occupation of the project site and undue work constraints began employing many unskilled daily wage laborers to do the work of journeymen. This was explained thus:

[CC-1 & CC-3] *... used unskilled labor for laying tiles; most were crooked.*

[CC-2] *... there were significant quality issues. . . uneven floors, poorly installed fixtures, and loosely fitted windows. . . one windowsill came loose and fell to the ground during a lecture, while another window fell from the 3rd floor to the ground, it could have killed someone.*

Part of the quality concern was accepted as internal to the project team, resulting from poor monitoring.

[CC-2] *The RE and PD were very lenient on the contractor and often overlooked quality concerns. Even the boss would ignore broken tiles and uneven floor. . . saying we can live with this for now.*

Discussions with the contractor pertaining to poor quality of his work resulted in retaliatory responses.

[CC-2] *... started blackmailing us by slowing work on the other works he had going. This would put added pressure on us as we needed to have space and facilities ready to run our operations.*

CC-2 explained that a possible reason for this was that a single contractor has been awarded multiple job contracts on the same site. The blackmailing attempts were met with resistance and the project management team was willing to settle for a lose-lose outcome. The example below provides a glimpse into how the project team responds to conflict.

[CC-1 & CC-3] *We meet with him here and told him to stop. . . we threatened him by telling him we would cancel his contract; we were ready for canceling the contract and had decided to do the work ourselves, through our works department. . . we were ready to go to court if he wanted and were going to take the losses just to get rid of him.*

A causal map of money & quality as drivers of project conflict & negotiation is exhibited in Figure 6.11.

(H) Pilferage

As explained in Table 6.8 pilferage refers to conflicts arising because of theft of project property or malicious damage to the project infrastructure for illicit gains. Several examples were presented during the case study interviews that contribute to this theme, exhibiting that pilferage is a driver of both project conflicts and negotiations.

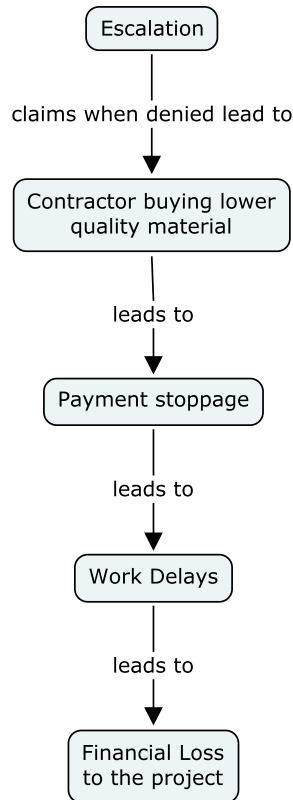


Figure 6.11: Causal Map of Money & Quality as a Driver of Project Conflict & Negotiation

Theft from the project site is a problem that the projects in the FATA/FR have to contend with. Theft occurs at the time of project execution, where abundant raw material at the project site is prone to theft and misuse. Several statements are provided below that illustrate this point.

[DS-1 & DS-2] *We are always missing some raw material. Like I said the tribes have a mentality that the raw material belongs to the government and they are free to take whatever they feel like. . . they breakoff pieces of supporting wall to take the bricks or chip away at bigger sections to get to the rebar. . . they sell stolen bricks, rebar, cement, etc..*

[DS-3] *...for them it's not a big deal, it's not considered stealing if you are taking government 'maal' [translation: 'maal' refers to property or possessions].*

[DS-4] *...government projects are welcomed as compared to NGO funded projects, but the problem this creates is that they consider these projects to be 'government maal' and okay to take from.*

Preventing damage to the work being done is the responsibility of the tribes, the Political Agent in working with the tribes hires security guards for the sites, who happen to belong to the local tribe. Thus, incessant incidences necessitate invoking

of a dialogue with the tribes in order to safeguard the project assets from further damage.

A causal map of pilferage as a driver of project conflict & negotiation is exhibited in Figure 6.12.

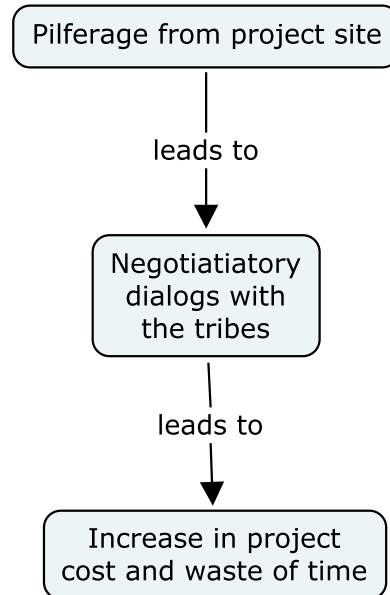


Figure 6.12: Causal Map of Pilferage as a Driver of Project Conflict & Negotiation

(I) Cheating/Bribery

A few instances of cheating were described during the project's initiation and execution stages. Instances of cheating during the initiation of a project were reported by the FATA/FR located projects. These instances center on the tribes attempts to receive greater financial benefits from the projects. The tribe members are aware that they can receive greater compensation for their settled land and they resort to unique ways to make their unused land seem otherwise.

[DS-1 & DS-2] *[The tribes are] really cunning and will do anything to claim that they are getting affected. I've seen instances where they built a cemetery of hundreds of graves in a matter of days and then put up claims that this land is very important to them as their ancestors' graves are there. Or they would plough a barren land with no access to any sort of water and say 'oh! I just planted [*expletive*] here'...*

The project team has become familiar with how the tribes attempt to gain unfair advantage (a version of the 'fake graves' story was also recounted by DS-3). In order to counteract false claims, the project team performs a reconnaissance survey of the

area and documents patches of tilled land, constructed areas, grave-sites, ponds, and drinking wells. This documentation is useful at the time of negotiating land access and is used to put any questionable claims to rest.

Cheating by the contractor also was a cause of conflict on the campus construction project. The story related below was of fake bills being generated by the contractor in order to gain higher profits. The story below does not directly explain a conflict in action, rather it provides context to how acts of cheating on a project act as drivers of conflict. Cheating at a very basic level may itself be considered a ‘goal conflict’, where the parties involved are working towards different goals.

[CC-meeting observation] *During one of the meetings observed it was found that the contractor was submitting false bills and was claiming escalation on rebar, which is allowable under the PEC/FDIC contracts being followed by the project. However, the contractor was doing this through collusion with the government bureau responsible for maintaining such data and through a process of bribery was getting them to provide him higher than market rates at the time of putting up an escalation case, whereas his actual purchase price was naturally lower. This was resulting in a \$352 per ton claim.*

Another example of cheating includes the project contractor not purchasing insurance for the workers employed on the jobsite, even though this is stipulated in the contract. None of the projects interviewed were providing insurance to their employees. This emerged as a concern after one of the laborers died on the job.

[CC-2] *...he had TB and the contractor allowed him to work. Poor guy was pushing a wheelbarrow up a ramp and his lungs must have given up on him...he died on the spot. There was no insurance purchased by the contractor; they put \$200 in his pocket and sent the body home.*

Consequently the project’s principal held an inquiry; resultantly a small fine was imposed on the contractor for violating the contract clause.

[CC-meeting observation] *The panel did not want to penalize the contractor and wanted to issue a written warning only. They argued about how this was a common practice and an excessive penalty would only result in the contractor hiking up prices or reducing quality. Finally it was decided to impose a token fine, the amount of which would be used to give charity on behalf of the deceased.*

Themes of bribe giving came up sporadically, one such example has already been discussed in section D. In another example, an interviewee explaining his experience referred to a situation where the tax department wanted to levy a tax on the project’s purchases. Despite alternative energy production equipment having been declared tax-exempt by the government, the purchase of these equipment was questioned.

[DS-5] ... it took us a lot of back and forth with them to convince them that solar panels were tax exempt. The main issue was getting them to sign off on the exemption documents...wanted their 'cut'...they come up with strange ways of getting to you.

Because of the topic's nature, the interviewees did not speak openly about the issue of bribery. Curt statements were received from all of the participants when the issue was inquired into. These ranged in variety from outright rejection of the possibility of bribes being taken or given, to a quick transfer of blame to those in higher positions within the organization. All projects staff interviewed emphasized that there was no such concern in their project. Examples include:

[DM-1 & DM-2] ... issue of corrupt practices, power struggles, and self-gain exist here, but these are beyond our office bounds so the PA, contractor, or others would be privy to this and perhaps you can ask them, I don't know if they want to talk.

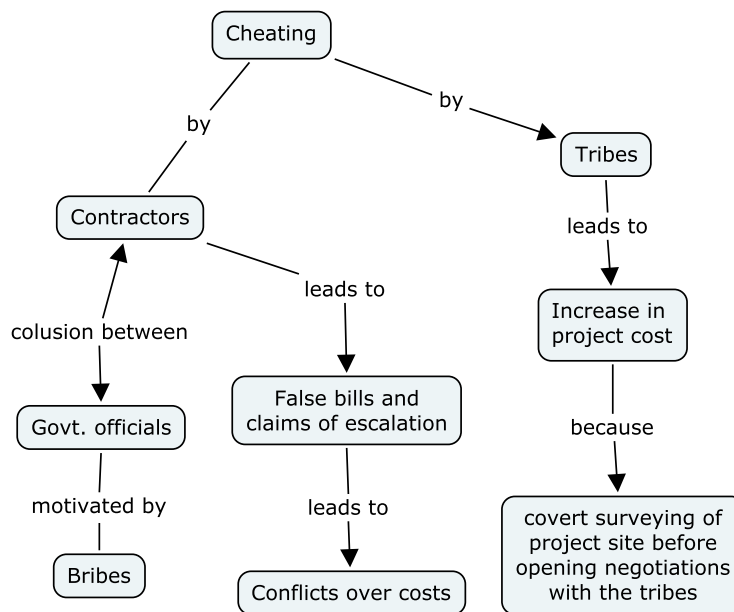


Figure 6.13: Causal Map of Cheating & Bribery as a Driver of Project Conflict & Negotiation

The causal map of cheating and bribery as a driver of project conflict & negotiation is exhibited in Figure 6.13.

(J) Law and Order Situation

All projects included in the case study from the region mentioned that they had conflicts stemming from the law and order situation in the region. In one instance this emerged as a concern from the workers about their safety.

[DM-3] *... union of workers was pushing to shutdown the plant; they were concerned about the lives of the workers. . . problem is not within the dam confines; security concerns are on the roads linking the dam to the rest of the villages and cities. . . we talked to them in person, and conveyed to them the message that we are also under threat and suffering. . . had to ask the army to provide an added level of security for them.*

Additionally, the law and order situation affects the movement of good and material to the project site; this has already been discussed in the section relating to resource availability (Section E).

A causal map of the law & order situation as a driver of project conflict & negotiation is exhibited in Figure 6.14.

6.3.2 Answering Research Question 3

This section seeks to address whether a project having a heterogeneous cultural makeup experiences conflict differently than a project with a homogenous cultural makeup, and if so how?

Before we begin our data analysis it is imperative that a definition of a culturally heterogeneous project be established. We accept a project to be culturally heterogeneous when it is composed of team members from the project's host country and countries other than the host country and there are frequent interactions (routine and otherwise) between them during the course of project work. In cases where a project team is from a foreign culture but does not interact with the host country's team then that project will be considered culturally homogenous.

Out of the four projects under discussion, only the dam extension project was composed of team members from other countries i.e. China and Germany. Both the German and Chinese teams were subcontractors to the primary contracting firm (a government owned large scale contractor) working on the project. Therefore, there was limited interaction between the foreign teams and the project principal. The German team was responsible for upgrading the powerhouse's Supervisory Control and Data Acquisition (SCADA) system, performed under a tendered agreement.

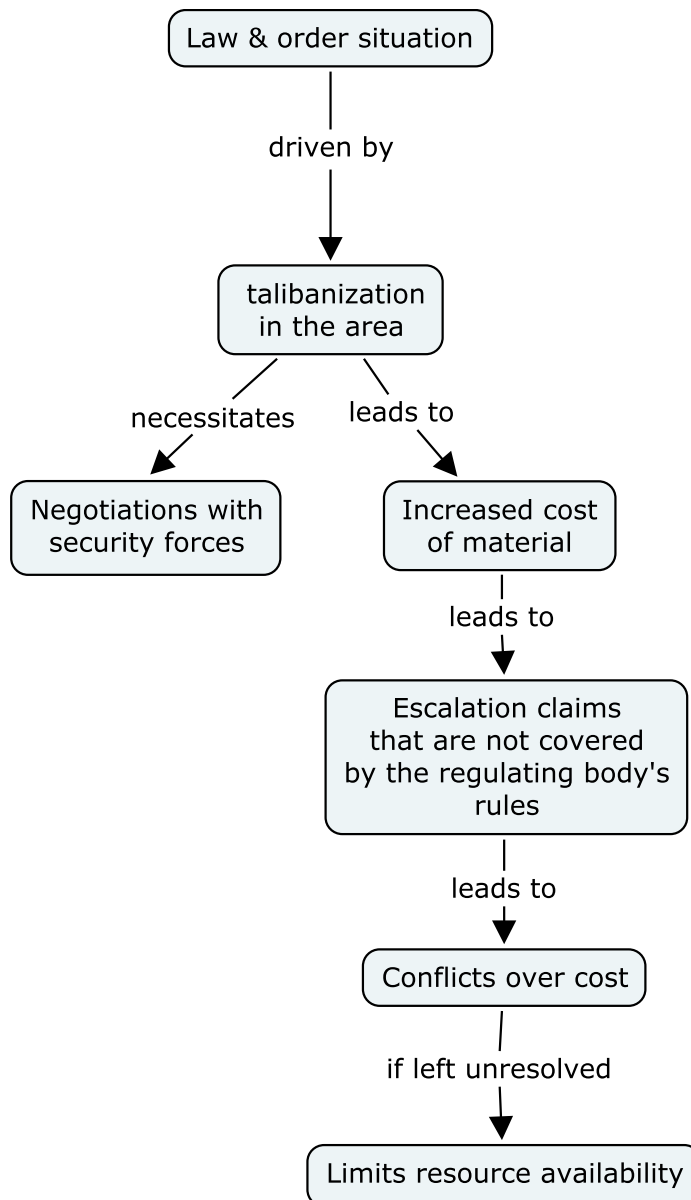


Figure 6.14: Causal Map of Law & Order as a Driver of Project Conflict & Negotiation

The Chinese team was responsible for providing technical knowhow for the dam extension. There was no interaction between the German and Chinese teams, as the nature of their work did not involve mutual interdependence, therefore each functioned independently of the other. The German team had no subcontractors but was facilitated by the local offices of their parent company. The work performed by the Chinese team was purely consultative in nature therefore further sub-contracting was not required.

For security reasons, both the Chinese and German teams were housed in their own special housing colonies, access to which was restricted to concerned personnel.

Therefore, no informal interactions between the foreign teams and local personnel (project principal and contractors) after the project's working hours were reported.

Hence, the project's cultural heterogeneity arose because of interactions between the foreign teams and host country contractor, while cultural homogeneity was found in interactions between the project's principal and contractor. As this research study is concerned with understanding the role of conflict & negotiation on project complexity from the perspective of project management teams, therefore I found no evidence on how this culturally heterogeneous project behaved differently in comparison to all the other culturally homogenous projects included in this section.

6.3.3 Answering Research Question 4

The fourth research question concerns what negotiation tactics the project teams use, and when and why they are used.

This section contains some repetition, as many examples cited in sections 6.3.1 and 6.3.2 contribute to answering the research question of concern to this section. In an effort to reduce needless repetition I present the answer to research question 4 in table 6.9, which is structured so that each sub-question asked by the study is answered in a separate column of the table. Names of the negotiation tactics are a mix of those derived from the literature and from the results of the earlier implementation of the survey methodology (see Chapter 5).

Some interesting themes can be observed in table 6.9, which are elaborated upon next. Informal interactions between the project management team and local tribes are explained as taking place in the form of face-to-face meetings. Formal meetings with the tribes are always in the form of a *jirga* (a gathering of tribal elders). These negotiation tactics are unified in that both involve an 'in person' encounter, whereas they are differentiated in that ordinary 'in person' encounters may not necessarily terminate decisively, but a *jirga* always terminates with a binding decision. Conflicts between the project and sponsoring organization results in the project staff adopting a style of 'avoidance', i.e. the project team does what is asked without offering resistance of any sort. Two reasons emerge from the data that explains this behavior: A desire to safeguard ones employment or associated benefits and a belief that there is no platform available for voicing ones opinion.

Conflicts with contractors related to poor quality, slow pace of work, erroneous billing, and any other act of cheating or pilferage, is resolved in a confrontational manner, the primary mechanism involves stoppage of payments, which is followed by calls for explanation, pressure tactics, and threats. Conflicts with parties that require mediation by a third-party entity are dealt with through a process of requests. These requests for clarification or facilitation take the form of formal written communications to the offending party.

Table 6.9: Negotiation Tactics Used in Publically Financed Projects Having a Physical Output: The When & Why?

Section	Item	Interview Case	Negotiation Tactics Used	Used When	Reason for Choosing Tactic(s)
Section 6.3.1	A	Payment for easement rights; tribes not allowing access to the project site	Meeting face-to-face, and <i>jirga</i> (favors a win-win solution)	Tribes demand higher payment option; tribes not allowing access to site until their demands are met	Negotiations with tribes are through a gathering of elders in the form of a <i>jirga</i>
	B	Pressure from higher officials resulting in poor workmanship and quality issues	Do nothing (avoidance)	Direct orders or threats are received or better incentives are offered	Fear of getting transferred, cuts in pay and promotion, and cuts in benefits
	C	Not being able to visit the site because the political agent has not negotiated permission or not arranged security	Requests (either via telephone or directly visiting the office of the concerned)	Mobilization is restricted	Political agent (PA) is directly under the command of the Governor; it makes more sense to approach the PA directly than to approach his superior
	D	Utility company representatives creating hindrances in providing hookup services to the national grid system	Pressure tactics or Giving in	Project work is stalled	Approaching the higher ups of the officials hindering the project work in order to influence them after attempts at direct resolution of the problem were unsuccessful
	E	Mobility of raw material	Request the PA & military for help	Project sites are located in the tribal areas, where at times the movement of material is restricted because of the law & order situation in the region	Negotiations need to be carried out with the security forces to secure access

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Section	Item	Interview Case	Negotiation Tactics Used	Used When	Reason for Choosing Tactic(s)
	F	Slow release of payments by the main office	Do nothing (avoidance)	Section officer from the main office introduces delays by requesting additional documentation	The project officers believe they do not have the right platform available to speak on this issue, therefore they choose to avoid the issue. A process of pre-releasing of funds is used instead to facilitate project work
		Lack of cooperation between a functional department and the project	Requests	Project work is stalled	The functional department is not obliged to facilitate the project therefore the only possible recourse for the project manager is to make a request for cooperation
		Lack of financial support received by the project	Requests for finance and passive resistance by doing nothing	Project work is stalled	Lack of response to initial attempts at acquiring additional project funding results in the project team adopting a passive approach to the project's financial issues with the intention of running the project until the finances run out and then requesting for additional funds at that time

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Section	Item	Interview Case	Negotiation Tactics Used	Used When	Reason for Choosing Tactic(s)
	G	Rejection of escalation claims leading to poor quality of work	Stop payments, Pressure tactics, and threats	Project (structural) quality work is detected	Cosmetic quality issues are not pursued as seriously as structural quality defects, which result in stoppage of payments until the rework is completed. Failure by the performing organization to remedy the defects leads to further pressure tactics being used. Unresolvable issues were escalated to the point of threats of contract cancelation and litigation
	H	Theft from project site or purposeful damage to the project infrastructure by the members of the tribes	Jirga	When project assets are stolen or damaged	Negotiations with tribes are through a gathering of elders in the form of a <i>jirga</i>
	I	Cheating by contractor by submitting inflated bills	Stop payment, call for explanation, and threats	Project principal is cheated financially	Billing anomalies reflexively are dealt with through payment stoppage. This is followed by a process of explanation calls to determine if the anomalies are genuine, and in case instances of cheating are found the project staff follows up with threats of blackballing the contractor from future government contracts until the problem is addressed
		Demands of bribes from government officials	Not Clear	Project staff is pressured	The interviewees were reluctant to answer this question and I am unable to provide a clear answer to this question

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Section	Item	Interview Case	Negotiation Tactics Used	Used When	Reason for Choosing Tactic(s)
Section 6.3.2	J	Security concerns by workers	Communicate (push for win-win solution)	Project staff pushing for work stoppage	To alleviate the staffs concerns and reach an amicable solution of mutual benefit
	B	Conflict with team member	Face-to-face, assign different work, Performance report, and transfer from site	Project team member does not perform	The interviewees explained a progression of measures used in the condition that a team member does not perform their assigned tasks. The logic driving the selection of these techniques was explained as experience based
		Conflict with contractor (poor quality, billing, or pace)	Stop payments, cancel contract, blacklist from future government contracts	Work performed by the project contractor suffers from quality issues or if there are billing concerns or if the pace of project work is slow	Stopping payments was the most common tactic used. Although canceling contracts or blacklisting of firms was mentioned none of the project interviewed has actually resorted to using these
		Conflict with contractor (technical disagreements)	Face-to-face, refer to contract, and engineer's decision	There are technical disagreement with the contractor e.g. escalation payments	These were defined as a series of steps taken during the project if technical disagreement arose between the project principal and contractors. The engineer's decision was considered the final step in direct negotiation with a contractor, further disagreements were referred to a dispute resolution board

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Section	Item	Interview Case	Negotiation Tactics Used	Used When	Reason for Choosing Tactic(s)
		Conflict with contractor (black-mailing)	Breaking off negotiation	Project management team felt that the contractor was black-mailing them	This was a condition where the project management team decided to break-off all negotiation and opted to escalate the conflict to the level of litigation at the risk of significant monetary losses. We consider this a failure of negotiation

6.4 Project Backgrounds: Moderate Structural Complexity/Medium Task Conflict Projects

The discussion contained in this section is based on data gathered from two case study projects that are funded through public finance. Both these projects possess moderate structural complexity and have a medium level of expected task conflicts. A similar presentation logic, as discussed in Section 6.3 is followed through each subsection below, which consists of a table containing key characteristics of the project, followed by a brief background of the project, and concludes with a presentation of its complexity diamond, using Shenhar and Dvir (2007)'s diamond approach, based on data from 86 projects (consisting of 73 different projects) plotted against the perceived complexity of each individual project under consideration.

6.4.1 Vocational Education Program

Table 6.10: Characteristics of the Vocational Education Program

Factors	Characteristics
Setting	Urban
Governance	National Law
Source of Funding	Public
Work Completed (at the time of data collection)	90%
Work Contracted Out	50-55%
Project Budget	\$7.199 million (US)
Number of Project Team Members	7
Number of Contractors	2
Project Status	On-time, revised for 2 more years
Project Financial Status	Within budget
Sector	Education

The vocational education program (VEP) is a combination of three smaller projects, two of which are interrelated (i.e. select beneficiaries from one project move progressively to become beneficiaries of the second project) while the output produced by the third project is not consumed by any other project. The precise makeup of these projects is explained next. Of the two interrelated projects, the first project is an institutional based training project (IBT), which focuses on the skills development of youth hailing from the FATA/FR; this project has a budget of \$2.496 million. Trainees benefitting from this project undertake vocational

trainings of 3, 4, or 6 month duration, where the choice of specific trainings to be imparted is driven by the industries offering job-placements (presently 29 different trainings are offered). The second project i.e. the field internship project (FI) has a budget of \$2.2275 million and comprises six-monthly on-the-job placements or internships offered through various partnering industries. The third project under the vocational education program is concerned with providing vocational trainings to women (VTW). This project differs from both the IBT and FI projects in that all of the presently functioning 39 training centers under the VTW are considered as independent training centers in incubation. Each training center is incubated for a period of two years after which financial support is withdrawn and the center is expected to run independently.

Next I provide a brief background of each project. The IBT project provides vocational trainings in 29 different trades. At the time of the interview 2,218 persons had completed their training program, with some moving to the second component project i.e. the FI project, while presently a batch of 684 individuals is undergoing training through the IBT project. The FI project has trained 103 individuals and at the time of this interview has recently accepted an additional 201 persons into their internship program. The VTW project has trained 6275 women since its inception; at the time of this interview a further 1500 women were undergoing training. Interestingly, the IBT and FI projects are open only to youth from the FATA/FR regions but are conducted solely within urban localities. The VTW project on the other hand is located within the confines of the FATA/FR.

It is worth noting that although all three of these projects were initially for a period of 1 year, all have been renewed for further 2 years based on the program's performance. Considering the significant budget and activities of the VEP only 7 persons are involved in its management (these are: 1 project director, 1 project accountant, 4 monitoring & control officers, 1 administrative officer). Also, the program shares its accountant with another project – the accountant does not have an office where the rest of the VEP staff works, rather his office is located at a considerable distance from the VEP site. A figure displaying the gap between the perceived and average complexity of the VEP is provided in Figure 6.15.

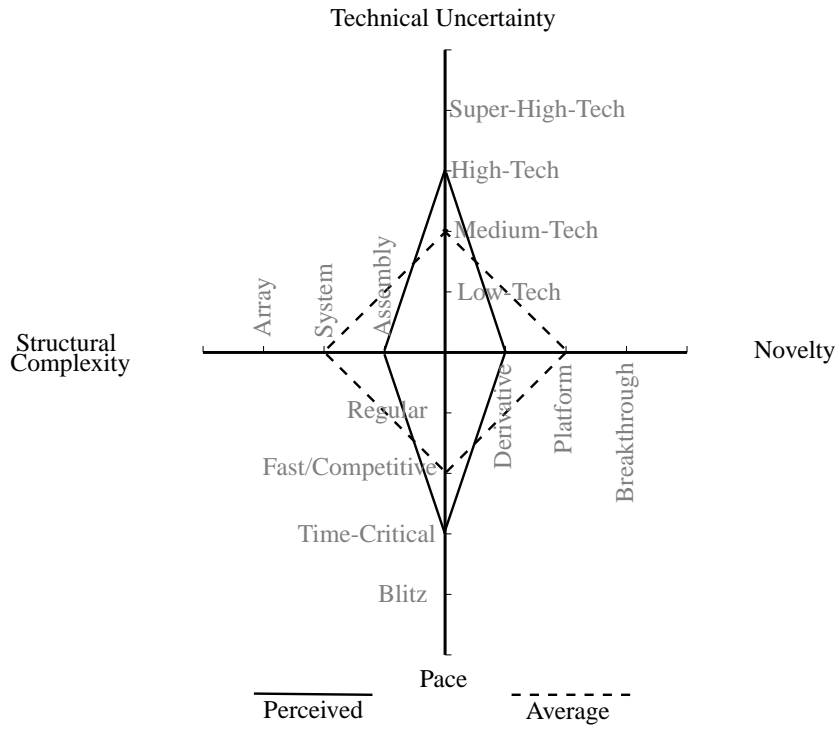


Figure 6.15: Complexity Diamond: Vocational Education Program

Table 6.11: Characteristics of the Mining Project

Factors	Characteristics
Setting	Urban & Rural Mixed
Governance	Tribal Law
Source of Funding	Public
Work Completed (at the time of data collection)	60%
Work Contracted Out	90%
Project Budget	\$13.608 million (US)
Number of Project Team Members	10
Number of Contractors	3
Project Status	On-time, revised for 2 more years
Project Financial Status	Within budget
Sector	Mining

6.4.2 Mining Project

The mining project performs three functions, these are: Mineral exploration and development, inspection of mines, and titles and licensing. The mineral exploration and development component of the project consists of mining prospect identification and its evaluation through geological exploration studies, laboratory studies of identified minerals, and outsourcing of established mineral deposit sites. The mines inspection component entails physical inspection of mines for safety, providing rescue

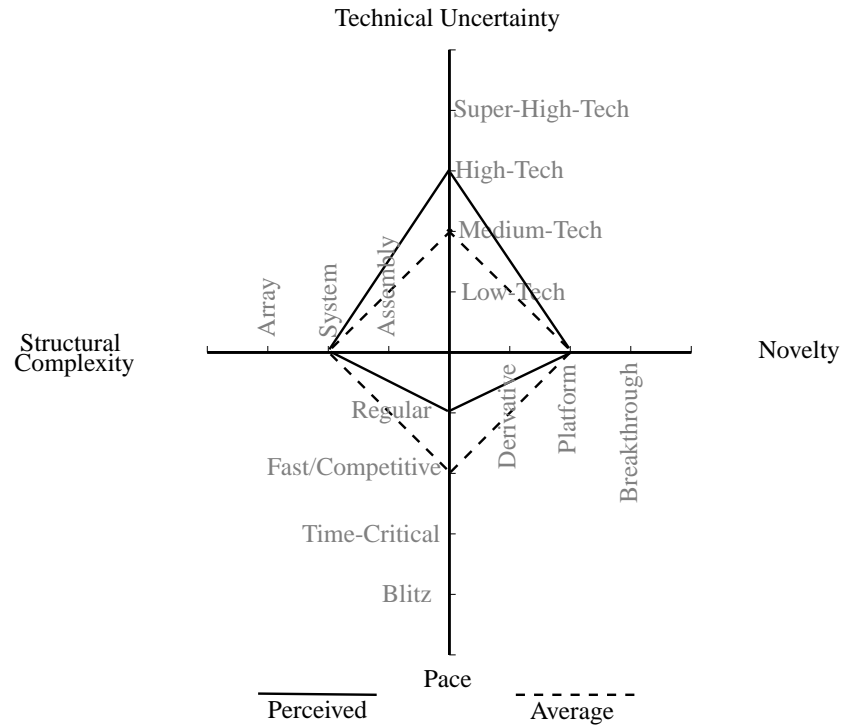


Figure 6.16: Complexity Diamond: Mining Project

trainings and conducting rescue operations, and providing trainings to and ensuring labor welfare. The titles and licensing component of the project is concerned with the grant of prospecting licenses, mining leases, and revenue collection.

Aside from the activities outlined above, the mining project performs, by employing various contractors, several activities on prospective sites under the mineral exploration and development component of the project. These activities include geographical mappings of sites, exploratory extractions of minerals from the sites, geophysical mappings of sites, laboratory testing of samples, and preparations of feasibilities studies for prospective sites. Once a site is deemed suitable for geological extraction, the project moves to the next phase whereby titles and licenses to the sites are granted to firms selected using a sealed bidding scheme.

The mining project has a small staff of 10, which consists of a project manager, a project accountant, administrative staff, and surveyors. The project office is located in an urban locality but the mines themselves are in the FATA/FR regions, therefore the projects staff frequently interacts with the tribes in whose areas the mining sites are located. The main activity of the mining project can be summarized as documentation, feasibility studies, and providing support, while licensees perform the actual mining work. Figure 6.16 exhibits the difference between the perceived versus average (actual) complexity of similar projects is the region.

6.5 Data Analysis: Moderate Structural Complexity/Medium Task Conflict Projects

This section presents an analysis of the data collected from projects that have a moderate level of structural complexity and a medium level of expected task conflicts. Following the presentation logic defined in section 6.3, data contained in this section stems from the implementation of the case study interviews, observations, and document examination – implementation details of which have already been discussed in Chapter 4. The narrative provided below results from data collected from two projects, of which the VEP provides services to youth and females from the FATA/FR regions in both the urban and tribal localities, whereas the mining project deals exclusively with mining projects located in the FATA/FR region.

Data collected from both the projects was collected using interviews and project document examination, additionally one meeting was observed on the mining project. Interview data was captured using causal maps where themes identified during the survey implementation of this study (discussed in Chapter 5) served as themes for further inquiry. The precise mechanism of how the interview, observation, and document analysis data was processed has already been discussed in section 6.1.

In order to maintain traceability of data through the section and to prevent needless in-text repetitions, a truncated name in the form of a code is assigned for each project, see Table 6.13.

Table 6.12: Codes Assigned to Projects

Project	Code
Vocational Education Program	VEP
Mining Project	MP

Interviewees from each project are identified through a coding scheme, where the project code precedes a unique number identifying each interviewee (e.g. VEP-1, refers to respondent 1 from the Vocational Education Program). Further elaboration of these codes is provided in table 6.13, which identifies the position held by each interviewee in their respective project and the duration of each interview.

The next section presents an analysis of the data and answers the research questions asked by this study. Research question 1 & 2, because of their interrelated

Table 6.13: Interviewee Codes and Positions Held Within the Project Hierarchy

Interviewee Code	Position Held	Interview Duration
VEP-1	Project Director	60 min
VEP-2	Project Manager	60 min
VEP-3	Project Accountant	90 min
MP-1	Project Director	90 min
MP-2	Project Manager	90 min
MP-3	Assistant Project Manager	60 min

nature are answered together in sub-section 6.5.1; while, research question 3 and 4 are answered individually in sub-section 6.5.2 and 6.5.3 respectively.

6.5.1 Answering Research Questions 1 & 2

Before I proceed to answering research question 1 & 2 it is important to note that this section follows the same presentation logic as discussed in the beginning of section 6.3.1. As an aide-mémoire research questions 1 & 2 are reproduced next: RQ1 question asks, what drives project conflicts and negotiation and how? While RQ2 asks, how do projects behave in the presence of conflict and associated actions and is there a pattern to this behavior?

The discussion below is presented according to categorical labels elaborated in tables 6.8 (i.e. land, political pressure, time, utility providers, availability of resources, policies, money & quality, pilferage, cheating & bribery, and law & order), which are derived from earlier empirical work discussed in Chapter 5. The following sub-sections build an explanation of the aforementioned drivers of conflict & negotiation; this is achieved through the presentation of excerpts from the various interviews conducted with the staff of the two projects identified in section 6.5.

(A) Land Access

As explained in table 6.8 the categorical theme of land refers to conflicts arising from or culminating in some sort of issues related to access or payment for its acquisition.

It is interesting to note that no land issues were found in relation to the VEP project. This is because both the IBT and FI components of the VEP are orchestrated in urban settings through contracted training partners and partner industries, which are well established and own & operate their own premises, therefore there

are no land acquisition issues related to these projects. Similarly, the VTW component of the program, although located in the FATA/FR areas, too does not entail any land related issues as the VTW training centers are housed in properties under the ownership and operation of the partner training providers, therefore the VEP does not experience any land issues related to the VTW. This was explained in very simple terms by an interviewee:

[VEP-3] *Our project has no physical infrastructure and operates out of rented premises.*

The MP on the other hand requires direct negotiations with the tribes for the sake of acquiring permission to access and mine the sites located in the FATA/FR tribal localities. Therefore, the data presented in this sub-section, i.e. in relation to land as a driver of project conflict and negotiation, is solely from the MP.

One interviewee in referring to the land based conflicts in the project indicated that a possible reason for these conflicts was the existence of profit sharing schemes in the mining contracts that are signed between the tribes and the project organization.

[MP-2 & MP-3] *The PC-1 contract has a profit sharing element to it, where the profit from the mines is shared with the tribe that owns the land. This gives rise to conflicts with the tribes whereby the tribes are always seeking to increase their profit margin...they do this by creating roadblocks for the project work until the disagreement is removed, mostly through an agreement on higher profits being paid otherwise the tribes don't allow the project work to continue.*

The above statement clearly indicates that there is a great potential for land access related conflicts to arise, these would consequently give rise to negotiated settlement agreements between the tribes and governmental bodies.

Another interviewee clarified that the necessity of negotiating with the tribes is enforced by a policy agreement between the Government of Pakistan and the World Bank. Therefore, a need to negotiate with the tribes is an inbuilt reality in the system that governs the process of initiating mining work in the tribal areas.

[MP-1] *We can't mine the sites ourselves, locals from the tribes have to be licensed to perform the work...this is because the 1995 Minerals Policy to which both the Government and the World Bank are signatories, which disallows 'direct mining by public sector organizations'.*

Although not directly a land related issue, minerals extracted from the land that is mined in the FATA/FR are a central issue in the conflicts with the tribes. Such

issues exist specifically in the FATA/FR mining areas and not in mining projects located in the settled areas i.e. those areas that are not tribal and adhere to the national laws of Pakistan.

[MP-2 & MP-3] *Minerals in the settled areas belong rightfully to the government, in such cases a fixed payment is made to the party on whose grounds the minerals are found. In the tribal areas, on the other hand, mineral deposits are under the rightful ownership of the tribe (quam) or individual on whose land the deposits are founds. Thus, agreements are needed with these persons to gain access to the deposits.*

Coming to such an agreement requires that negotiations take place between the parties involved. Explaining the nature of these settlement-oriented meetings, our interviewee provided the following statement.

[MP-1] *... elders represent the tribes whereas our representation is through the PA [political agent]. The PA's role is to provide us with clearances, ensure that the locals cooperate, to provide facilitation when needed, and to negotiate settlement amounts with the locals.*

As to how the Political Agent (PA) knows the boundary of the negotiation i.e. how does the PA know the amount or percentage of revenue agreeable to the project? Our interviewee provided the following explanation.

[MP-1] *We have to tell the PA what would be the lowest profit margin acceptable to us; this is determined at the time of the project feasibility studies and includes recovery of costs associated with the feasibility study itself as well as profit generation. If we don't discuss these with the PA he would negotiate on arbitrary terms.*

Indicating the difficulty of negotiating with the tribes, and the complex nature of the negotiation process, another interviewee explained:

[MP-2 & MP-3] *... projects in the settled areas are easier as you need to negotiate with a single person, while in the FATA/FR you have the whole tribe to deal with. In these areas there is a lot of joblessness and their rights are not in place, during the negotiation you have to ensure that you don't violate them. Additionally, the contractors have to be selected from within the tribes, adding an additional element of difficulty to the negotiation. Things are considerably simpler when the tribe that owns the land is the same tribe to which the contractor belongs... in the sense that the contractor is more agreeable to the terms of the contract as his tribe is already committed to the project.*

The swiftness of the negotiation process was a surprising finding.

[MP-1] *It's a 3 or 4 day job... the locals mostly agree to the project and the proposed revenue agreements as they receive social benefits such as jobs, roads, and revenue from the project.*

A causal map of the data discussed thus far is presented in Figure 6.17, which presents a graphical representation of how land acts as a driver of project conflict & negotiation.

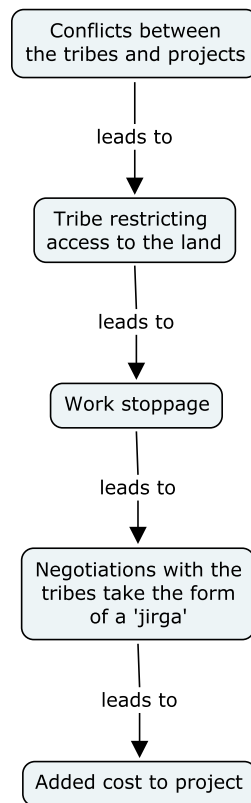


Figure 6.17: Causal Map of Land Related Issues as a Driver of Project Conflict & Negotiation

(B) Political Pressure

Instances of political pressure on the project director were apparent during the interview and a meeting observation at the site of the MP. During the observation of one meeting a heated argument between the MP-1 and General Manager (GM) of the mining project was observed.

[Meeting Observation MP] *The argument pertained to the GM suggesting that a key draftsman from the MP be transferred to another position in the organization hierarchy. Our respondent, MP-1, was visibly agitated during this encounter however he was observed continuously pleading his case i.e. that the draftsman not be transferred; MP-1 suggested that the draftsman had served*

his project for many years and was happy at his present position and too did not wish to be transferred. At which point the GM responded that he was simply offering a suggestion but since MP-1 felt so strongly about the decision he would abandon the idea. Upon the departure of the GM the draftsman came to meet with MP-1 and enquired into the outcome of the meeting. MP-1 informed the draftsman that he had intimated to the GM his concerns quite politely and informed the GM that he was the boss and had a right to transfer the draftsman if he wanted, however if such a transfer was initiated the project work would surely suffer. He also informed the draftsman that he told the GM that the draftsman was not willing to be transferred. MP-1 then counseled the draftsman to not worry and carry on his work

As our interview of MP-1 began immediately after the encounter i.e. upon the departure of the GM, MP-1 began to digress and began to solicit the researchers feedback. At which point I had to gently remind the interviewee that I was present as an observer and therefore could not contribute to the discussion. At which point, the interviewee responded that he wanted to clarify to others present in the room as to what had happened, why it happened, and how he dealt with such encounters with the GM (clearly indicating that this was not a one-of incident and that pressure tactics from the GM were something of a norm for the project). MP-1's explanation follows:

[MP-1] *The GM is not a good man; he likes to dictate to me by putting pressure on me. I hold my ground though...he tries a lot but I know how to deal with him. If I didn't know my job, I would easily have given into his demands. [Referring to the incidence described above in context of the meeting observation]...he's probably going to try to brainwash the guy into agreeing to his transfer...always has people he wants to be employed on to the projects, either as officers, staff, drivers, or guards etc.*

The interviewee clarified that he was opposed to such undue pressures from the GM on the basis that he preferred open competition for all positions within the project hierarchy.

[MP-1] *I prefer to have open-competition for all positions and that selection be made on the basis of merit only...I don't want any favoritism to take place.*

These sentiments were repeated later on during the interview again while referring to the hiring of contracting parties for the project work.

[MP-1] *...our hiring is based on open competition*

Existence of political pressure on the VEP was subtle in nature and the interviewees reported that it was not a cause of conflicts on the project to any significant

extent. They reasoned that perhaps this was the case due to the locality of the project or because of the established and openly conveyed quotas per tribe.

[VEP-1 and VEP-2] *We probably have more intra-departmental conflicts than conflicts with our training providers or outsiders. As I've explained our projects are in the settled areas there is no direct pressure on us; I also take in a representative share of students from each tribe so there is fairness in the process as well...political pressure would be there if we were up to no good. We try our best to accommodate any requests by tribes or by the political agents when possible...such as if we have seats vacant after the close of application date.*

A causal map of political pressures as a driver of project conflict & negotiation is presented in Figure 6.18.

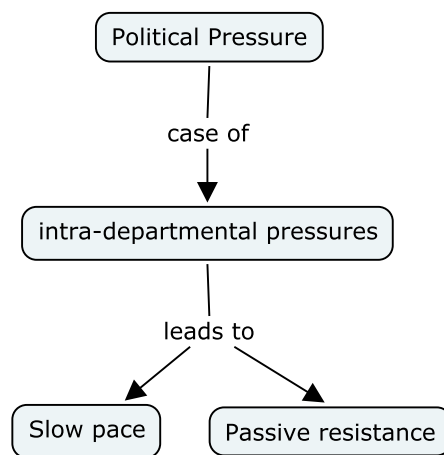


Figure 6.18: Causal Map of Political Issues as a Driver of Project Conflict & Negotiation

(C) Time

An interviewee from the MP directed attention to the project proposal as a possible contributor to later time related issues in projects. In comparing writing of project proposals to an ‘art form’ one interviewee argued that time related conflicts on projects are attributable to the lack of knowledge of those preparing proposal documents, consequently projects have unrealistic baselines. He verbalized these concerns thusly:

[MP-1] *If you don't know anything about mining or the area to be mined, you'll put unrealistic times in the PC-1 [project cost-1 document, which refers to the project proposal Performa of the Planning Commission of Pakistan]. What is needed is someone who actually knows something about mining and*

has visited the area writes the PC-1. What happens then is that during the project implementation we're unable to deliver what is claimed, both in regards to time and finance.

The statement above hints at possible scheduling conflicts within the project arising from the hiring policies of the project's sponsor organization. Background details on how political pressure within the project is used to influence hiring policies was explained in the previous section.

Another example indicates the intermediary role of time as a possible driver of conflict during projects. This example, as elaborated upon in sub-section 'f', demonstrates that hiring decisions may materialize in the form of scheduling delays in the project work, these in turn may lead to further conflicts that may necessitate negotiation. The example presenting a case of variable prices of mined raw material in the market demonstrates that time is a possible conflict driver, as delays in project acceptance could result in the reduction of the contractor's profit margins (due to diminishing market prices) and consequently rendering the contract between the parties no longer viable, thus necessitating renegotiations. Alternatively, such delays could work in favor of the contractor whereby they and the government entity may receive increased profits (as the prices paid in the market for the raw material increase), however such a case may give birth to renegotiations between the tribes and the government body, as the tribe may have negotiated on a fixed payment settlement would no longer find the monetary benefit viable. This possibility exists as the profit sharing agreements between the government, through the use of the political agent (PA) as an intermediary, and the tribes may well take the form of fixed amount profit sharing agreements rather than variable amount i.e. percent of per ton of raw material mined.

Time was also a driver of conflicts during the VEP project. One such example was provided in the context of a policy driven conflict (discussed in more detail in sub-section 'f') where the project personnel felt that the use of certain standards and tools, as required by their bosses, was not a productive activity and introduced unnecessary delays in their work.

[VEP-3] *Time consuming and non-productive meetings and tours waste a lot of our energy. There are always useless reports that are being asked for... it's always one thing or another... the bosses are not interested in focusing on the work that needs to be done, they're more interested in experimenting the use of new forms and templates.*

Consequently:

[VEP-3] ... *we get delayed in employing students, get left with unspent stipends, and are unable to purchase material and machinery needed for the projects on time.*

A causal map of time as a driver of project conflict & negotiation is presented in Figure 6.19.

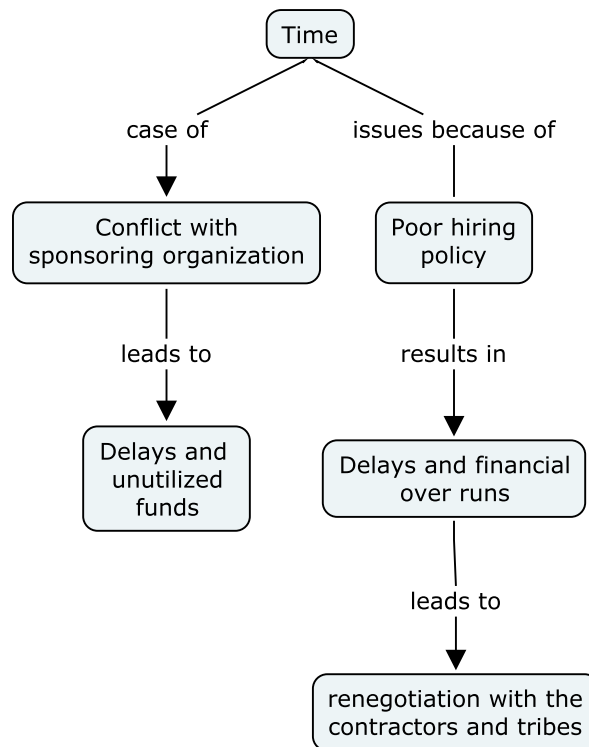


Figure 6.19: Causal Map of Time as a Driver of Project Conflict & Negotiation

(D) Utility Providers

As both the VEP and MP projects are service-oriented projects there were no conflicts found on either project in relation to utility providers. Repeated inquiry into the theme of utility providers as a driver of conflict & negotiation on both the projects, at different times during the interviews, did not result in any data. The reason as to why this was the case differed on both projects; for the VEP no conflicts with the utility providers existed because the project's relationship with the utility providers was simply that of a consumer-supplier type; in contrast to the dependencies exhibited between the projects and utility providers discussed in section 6.3.1.

Whereas, MP clarified that due to the remoteness of the mining sites there were no utility providers present in the vicinity therefore, the project had absolutely no need to interact with them.

(E) Availability of Resources

Considering that the projects under discussion are service oriented, availability of resources featured as a driver of conflict, as expected, in relation to human capital. Certainly, conflicts were found pertaining to resources other than human capital, but to a lesser extent.

On one project an interviewee lamented the project organization's general manager's (GM) role in exercising undue pressure on the project (this has already been discussed in sub-section 'b' political pressure) and the influence of improper hiring practices by the personnel department of the project's parent organization. How this leads to conflicts and delays in the project has been explained in sections 'b' and 'c'.

[MP-1] *I keep getting sent irrelevant people by the main office to work on my project. They are either very young and have no experience whatsoever or are not from the mining profession, for example I got sent three people with a finance background, while what I need is staff that understand mining.*

Another example of resource availability as a driver of conflicts has already been discussed in sub-section 'b' (political pressure) where the GM was attempting to transfer an individual off the mining project to another project. The reason for resisting the loss of an employee was explained in these terms:

[MP-1] *The [GM] is trying to get my best man to transfer to another project. . . this guy has been with me for 5 years, he knows everything about the project.*

Another example, which on the surface seems like a policy concern, presented a case of resource availability as a driver of project conflicts. An interviewee explaining the policy of contractor selection explains:

[MP-2 & MP-3] *The policy is to hire contactors in open competition, who are capable, have the ability to mobilize, and are from the local area. We award contract based on open competition and merit. Issues arise in the project when qualified contractors from within the tribe are not available and we have to award it to someone from another tribe or from the settled area. . . if the tribe doesn't agree the project cannot move forward.*

Contractor selection is a concern for the tribes, as the tribe is seeking to maximize its gains through mining agreements, profit sharing, and employment opportunities for its members. Hiring of an outside contractor means that the tribe may not receive a fair-share of the profit (see later discussion in sub-section ‘I’ cheating and bribery) and lose out on employment opportunities as the contractor will prefer to hire from his own tribe. Therefore, the tribes closely monitor the contractor selection and contract award process and may deny access to the site if the selection and award are not acceptable to them, therefore necessitating further negotiatory dialog with the tribe.

Resource conflicts in the VEP project featured in the form of the use of training material, equipment, and training methodology other than what was originally agreed to at the time of signing agreements with the training providers. Interview excerpts detailing this issue have already been discussed in section ‘I’ on cheating & bribery.

A causal map of resource availability as a driver of project conflict & negotiation is presented in Figure 6.20.

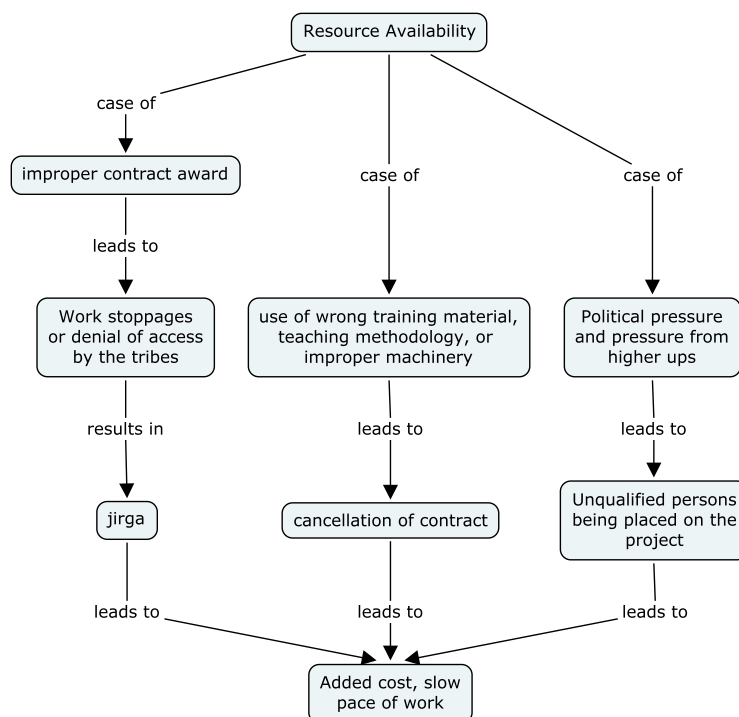


Figure 6.20: Causal Map of Resource Availability as a Driver of Project Conflict & Negotiation

(F) Policies

Conflicts between government departments feature due to policy related issues. One such example exhibits a mismatch between the policy of using the Pakistan Engineering Council's (PEC) format for project contracts against a reality where this contract cannot be applied.

[MP-1] *The Planning Commission wants us to follow Pakistan Engineering Council's (PEC) contracts, which don't fit our need. We have a different job, with different deliverables, accounts, and "audit para's" [audit clause] that cannot be managed via these contracts. Therefore, we follow the Project Management & Development Committee's (PMDC) joint venture contract format, which include an element of profit sharing; for the project proposal we follow the PEC proposal format. The PMDC contracts are troublesome for the Planning Commission people; they don't seem to understand anything other than the PEC contract format.*

This discrepancy between the needs of the funding body and the project is a cause of delays to the projects, which according to our interviewee is problematic as the variability in the prices and demand for minerals in the markets is such that a certain mineral may no longer be in demand by the time the contracting issues are resolved. Therefore, the contractor would no longer be interested in the project.

[MP-1] *Timely execution of the contracts is key...market demands change daily and contractors don't pursue contracts that are not financially viable. Although, at times a delay has the exact opposite effect...for example 10 years ago the per ton price for copper-ore was \$22.5 and nowadays it is selling for \$112.5.*

Another example of policy as a driver of project conflict & negotiation on the MP was explained in relation to contractor selection in sub-section 'e', which pertained to the availability of resources.

Instances of policy as a driver of project conflict & negotiation were found on the VEP, where the project principal wants the VEP to use the PMBOK standard for managing the project while the VEP staff find it difficult to implement. Quite interestingly in the following examples the policy driven conflicts affect the project by introducing time delays and may possibly give rise to future conflicts because of deceptive reporting practices followed by the VEP staff.

[VEP-1 and VEP-2] *They [head office] wants us to use the PMBOK methodology to manage our projects however such normative things don't work...our reality is too fluid and things change on a daily basis. The end result is that*

in order to pacify the FDA [Fata Development Authority i.e. the project principal] we reverse engineer our reports after the fact... meaning we doctor the reports to fit the situation as if we had planned it that way from the start. They want us to use MS Project but we don't see a benefit of it so we put our data into it later and attach printouts from the software; for us there is a big gap between what is planned and what actually get accomplished.

Explaining further, the interviewee clarified that the situation is a result of a trust deficit between the principal and the project staff.

[VEP-1 and VEP-2] Full confidence in us from the FDA is lacking. These activities [referring to the use of PMBOK and MS Project] take up precious time and add to the cost of the project; and are useless, contributing nothing but delay to our work.

Such delays were explained as a cause of further complications in the project, such as delays in allocation of material.

[VEP-3] ... we get delayed in employing students, get left with unspent stipends, and are unable to purchase material and machinery needed for the projects on time.

A causal map of policies as a driver of project conflict & negotiation is presented in Figure 6.21.

(G) Money & Quality

A potential source of conflict between the government department and performing contractor exists because of an undefined revenue payment formula between the contractors and government bodies, thereby necessitating the initiation of a negotiatory dialog between the concerned entities. Shedding further light on the matter an interviewee clarified that mining activities in the tribal areas are run as partnership agreements between the government and performing contractors, whereby a portion of the revenue from the mining sites is paid to the government.

[MP-2 and MP-3] These are joint ventures, which have a 'secure option' i.e. a per ton revenue is to be paid to the government. Unfortunately, we don't have a set agreed upon amount for this payment; the percentage of revenue paid is something that we negotiate on at the time of contract award.

Certainly, this should by no means be understood as a complete lack of existence of a profit sharing scheme. Elaborating on the extent of the government's involvement in each project an interviewee detailed the nature of the contracts used.

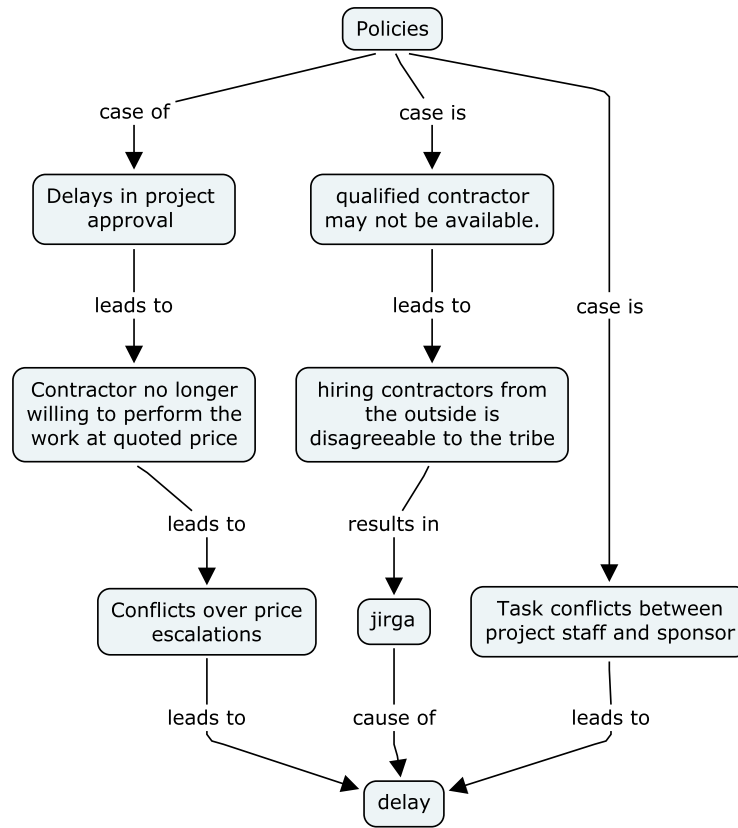


Figure 6.21: Causal Map of Policies as a Driver of Project Conflict & Negotiation

[MP-1] *Our contracts follow the PMDC's [Project Management and Development Committee] joint venture format; these have a profit sharing mechanism in place. We fund 80% of the project cost and the remaining 20% is by the contract winner. Therefore, we ask for 80% of the per ton revenue from the mining activity, the rest goes to the contractor. . . yes, we do negotiate and are flexible if the contractor is at a greater risk.*

Providing further clarification, our interviewee explained the root of conflict as residing in the contractor's motive to increase their earnings. Unfortunately, such demands for higher profits lead to a potential decrease in the earnings payable to the tribes, therefore giving birth to potential conflicts with the tribes.

[MP-1] *The need for negotiation arises where a contractor seeks higher earnings than what we allow through our contracts. If we give into their demands this means we will face problems from the tribes; the reason being that part of the revenue received by the government [referring to the MP] from the mining operation is paid back to the tribes or quams as payment for using their land and owned resources.*

Quality of the mined raw material was not a driver of any conflict. Perhaps, a reason being that the mines feasibilities studies are conducted by the MP staff themselves and therefore the quality of the mineral to be mined is already known

to the MP staff prior to contract award. Although, this does not mean that quality is not a concern for the project at all, however this quality concern stems from the law and order situation in the area and is discussed in sub-section ‘j’.

Money was a driver of project conflict in the VEP project, an example of students attempting to defraud the project by registering themselves in various programs is discussed in section ‘I’ on cheating & bribery. Aside from this no further examples of money related conflicts were found on the VEP.

An example of quality as a possible driver of conflict & negotiation on the VEP is discussed in the context of sub-section ‘I’ on cheating & bribery where previous contractors were found using inappropriate material and equipment than what was agreed to at the time of contract award. As the contracts of these parties were revoked and the work assigned to other contractors further inquiry from the VEP interviewee did not lead to any other examples pertaining to monetary conflicts with the contractors being reported.

There was however conflict between the project principal and project staff pertaining to release of funds. An interviewee explaining the added delays to the project due to the imposed requirement of the use of PMBOK and MS project (discussed in section ‘f’ pertaining to policy related conflicts) explained:

[VEP-1 and VEP-2] ...these activities delay us...billing is delayed, while we are further delayed by the FDA who are slow in clearing out bills, they use traditional accounting and audit procedures which don't work in a project environment. This delays us in payment to the contractors and providing stipends to the students.

The statement above conveys the existence of task conflicts resulting from the mismatch between the project workflow and project management techniques employed by the project.

A causal map of money & quality as a driver of project conflict & negotiation is presented in Figure 6.22.

(H) Pilferage

There were some issues reported pertaining to pilferage from the MP sites. These incidences are not attributable to any of the parties directly involved in the project, rather they are a consequence of the presence of the Taliban in the area. There seems to exist a belief that the tribes could play a role in the reduction of thefts

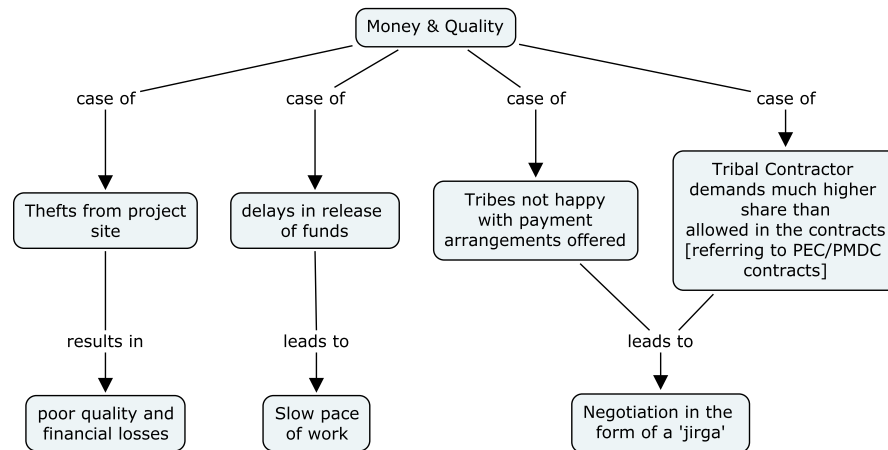


Figure 6.22: Causal Map of Money & Quality as a Driver of Project Conflict & Negotiation

from the projects. Thus, any occurrence of pilferage from the project site results in a dialog with the concerned tribe in order to pressure them to maintain law & order in their area. However, such negotiations are not yielding any positive results. One interviewee explaining the state of mining in the tribal areas provided the following information.

[MP-1] *Completely mechanized mining is not possible in the FATA/FR because of security reasons. The Taliban either blow up the equipment, if it's not of use to them or they can't take it away, or they steal it for their own use. This has led to poor quality issues specifically in the marble quarries... We keep telling the tribes this can't go on; you have to secure the mining assets... just table talk mostly, nothing good ever comes from it. The Taliban have killed two of our partners and stolen lots of our machines.*

Instances of pilferage were not reported by the VEP in any of their three projects (i.e. the VTW, IBT, or FI projects). A possible reason being a policy decision of the VEP whereby raw material used during trainings is considered to be a property of the students therefore eliminating any incentive for the students to steal from the project. When asked if there were any accounts of pilferage from the training providers, the interviewee responded:

[VEP-1 and VEP-2] *We presently work with the most established and renowned vocational training providers in the region, trainee graduates from these schools are the most sought after in the market. These organizations are either government run or military run and therefore they don't lack in discipline. We haven't had any trouble from them.*

Pilferage from government run projects had previously been explained by DS-4 in section 6.3.1 subsection ‘h’ (who happens to be the accountant for the VEP as well), this statement is reproduced below; please note that to maintain consistency within the sub-section DS-4 is recoded as VEP-3 in this sub-section.

[VEP-3] ... *government projects are welcomed as compared to NGO funded projects, but the problem this creates is that they consider these projects to be ‘government maal’ [govt. property] and okay to take from.*

A causal map of pilferage as a driver of project conflict & negotiation is presented in Figure 6.23.

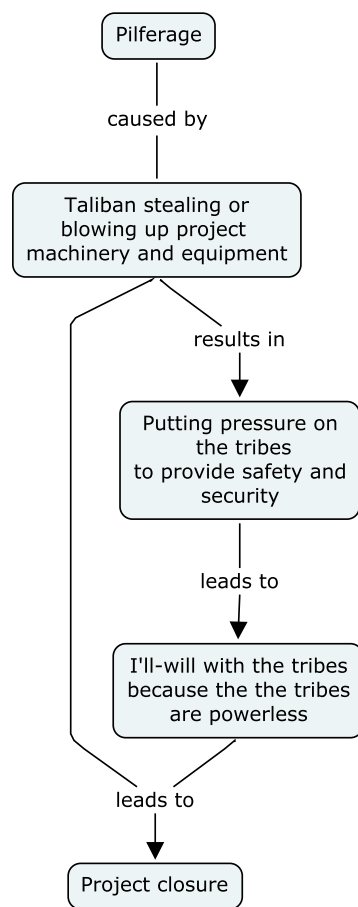


Figure 6.23: Causal Map of Pilferage as a Driver of Project Conflict & Negotiation

(I) Cheating & Bribery

Staff from both the MP and VEP provided examples relating to the theme of cheating & bribery as a driver of project conflict and negotiation. However, respondents from the VEP were, despite inquiry into the theme at different times during the

interview, adamant in their stance that there were absolutely no cases of bribe taking or giving associated with their project. Examples pertaining to bribery are only reported from the MP.

Bribe taking was a driver of conflict and negotiation in the MP. The project director indicated that their GM who was, as elaborated in sub-section ‘b’ and ‘e’, exercising pressure on MP-1 to hire unqualified persons or transfer staff to other positions within the organization so as to open up vacancies for those whom he wanted hired, engaged in receiving bribes.

[MP-1] *[Speaking about the GM] he’s here on deputation...has a corruption case against him in the PMDC so he has been sent here while his case is in process. He gets good money here, a car plus telephone plus 50K more salary than me per month...but he still takes bribes. All directly under or above him are involved in this [bribe taking] including other supervisors and technical persons.*

An interviewee of the VEP presented an example of cheating as a driver of conflict, where a student registered under a fake name was found attending the training program. Once it was identified that the student had falsely registered in the program the VEP decided to cancel its contract with the training provider. This resulted in a series of dialogs between the VEP and the training provider. The following statement provides evidence as to how this conflict was resolved on the project following a win-win negotiation strategy.

[VEP-1 and VEP-2]...*the student was found during an M&E (monitoring and evaluation) exercise because we had 52 registered students but 53 were attending the trainings. When we investigated into the matter we found that this kid was using his cousins name, the original person was selected but had decided not to enroll. The training provider was at fault in this case as it was their responsibility to keep a check...initially we were planning to call the contract with the training provider, but then after several meetings with them and taking into consideration the fact that there aren’t many well qualified trainers available in the local market we decided to penalize them...he [the training provider] was charged the cost of the student i.e. the student fees, stipend, material cost etc. that we were charged. The student was given an option to continue attending the training provided he was willing to pay on his own. Attendance is still the responsibility of the training provider we perform spot checks...mostly once per month.*

Other examples of cheating included the training providers using other machines and training material to the ones agreed with them during contract signing. Such practices were not looked up favorably by the VEP.

[VEP-1 and VEP-2] *We were not very happy when different contractors [training provider] attempted to defraud us by providing material or using equipment that were not appropriate for the training needs of the students. Initially, we had a number of such incidences but then we eventually narrowed down our contract award to a few select training providers that are of good repute..*

Other examples of cheating on the project pertained to attempts by students to defraud the project; this was explained thus:

[VEP-1 and VEP-2] *We enforce a strict attendance policy on our trainees. This was previously not the case but we eventually found that some of the students were monopolizing the system. They would register with us and at the same time register with some other training program as well; this would enable them to receive a stipend from both projects, while they would attend one or none of the trainings. This was troubling as rather than benefiting from the training the tribal members were more interested in the financial gains. We had to speak to the tribes and convey to them the idea that this could no longer go on. As agreed to by the tribes tough measures were needed and if a trainee from a tribe was found attempting to cheat the entire tribe would be blacklisted and would no longer be able to benefit from future trainings. We now have zero tolerance on attendance for this reason and you may consider that one of the prime motive behind our M&E exercise is to weed out such cases. 100% attendance is required for 3 months, with 3 sick days allowed per month; at times a student goes missing for longer because he is unable to travel back to the project site due to security related issues at his village. . . in such cases we have to make a decision whether to allow them to continue or re-enroll at a later time.*

A causal map of cheating & bribery as a driver of project conflict & negotiation is presented in Figure 6.24.

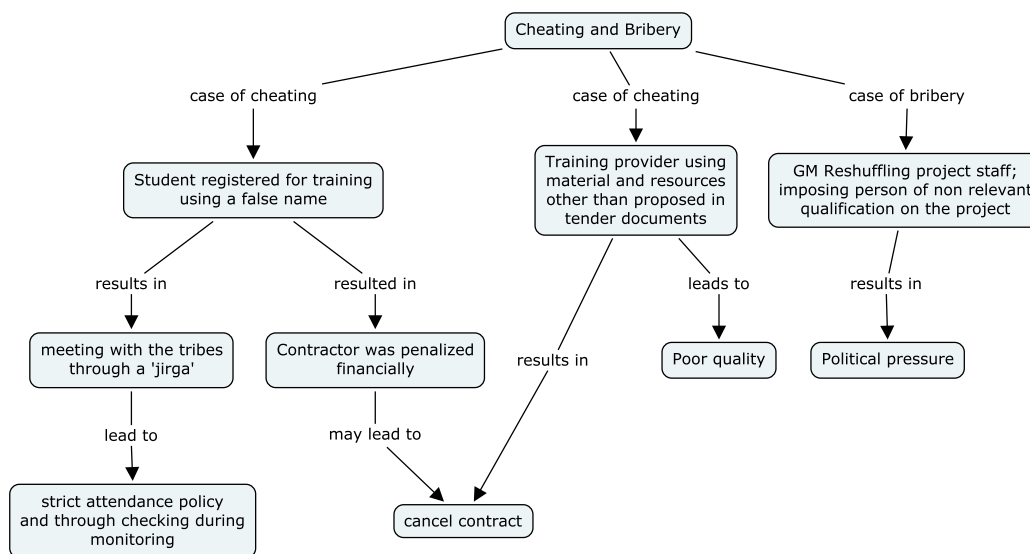


Figure 6.24: Causal Map of Cheating & Bribery as a Driver of Project Conflict & Negotiation

(J) Law & Order

The prevailing law & order situation in the FATA/FR creates extraneous issues during the projects that drive project conflicts & negotiations in one way or another. One such example was previously discussed in the context of sub-section ‘h’ where the Taliban are stealing equipment from the mining sites as well as causing bodily harm and loss of life to those working at the sites (be it contractors, project principals, or tribal members). Other examples provide a glimpse into harshness of the reality of the tribal based projects.

[MP-2 and MP-3] *In FATA you have to contend with both financial and personal risk. We had to close down one site due to the volatile conditions there...two of our partners were killed there and our equipment was also stolen. We are concerned for our staff when they go there...there is no exit strategy to evacuate our people incase of an emergency. If we were in a foreign country I would chopper [short for helicopter] them there and back but here we just have to be brave.*

The issues outlined in the above example when explored further showed there is a conflict between the project staff and parent organization pertaining to a lack of policy regarding the staff’s wellbeing and insurance incase of mishaps at the project site.

[MP-1] *We’re paid decent salary but there is no insurance. If a policeman dies on the job he is a ‘shaheed’ [martyr] and his family receives full salary for life...we’ve nothing as such. We have said this to the GM several times but he’s busy with his own problems and hasn’t put the matter up for any consideration...there is different CSR [Corporate Social Responsibility] in FATA than in the settled areas.*

The law and order situation also featured as a source of conflict within the VEP, several training centers were closed as a result making it difficult to meet the project objectives. It is worth noting that only the VTW’s were directly affected by the law & order situation and not the IBT and FI projects as the latter are orchestrated in settled areas. The following example shows how conflict in the region has affected the project. The statement also clarifies the project’s strategy of conflict avoidance via the process of project closures in areas of conflict.

[VEP-1 & VEP-2] *Around 70 of our training centers had to be shut down because of fear of the Taliban. On the other hand our most successful women training center is in a madrassa [religious school] named ‘Jamia Noor Mohammad’ in Waziristan that is run by the Taliban. As a result of the closures*

we loose money that we've invested in material and equipment at the site; for now we are waiting for the best and hope to get these centers back up and running when the time is right.

A causal map of law & order as a driver of project conflict & negotiation is presented in Figure 6.25.

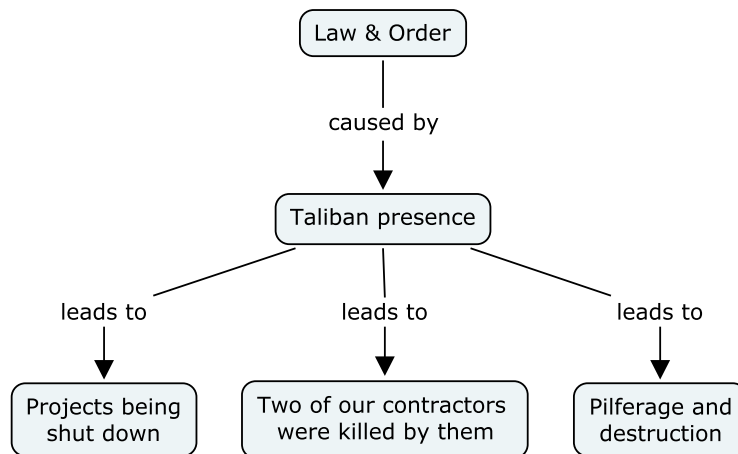


Figure 6.25: Causal Map of Law & Order as a Driver of Project Conflict & Negotiation

6.5.2 Answering Research Question 3

None of the projects under consideration in this section were culturally heterogeneous; therefore, I am unable to address research question 3 via input from projects that are publicly funded and service oriented.

6.5.3 Answering Research Question 4

The fourth research question asked by this study is interested in knowing what negotiation tactics project teams use and when & why they are used. This section is structured using the presentation logic expressed in section 6.3.3. Data addressing this research question is presented in table 6.14. Some patterns that are similar to those found in section 6.3.3 are discussed next.

Table 6.14: Negotiation Tactics Used in Publically Financed Service-Oriented Projects: The When & Why?

Section	Item	Interview Case	Negotiation Tactics Used	Used When	Reason for Choosing Tactic(s)
Section 6.5.1	A	Disagreement on profit sharing arrangement between the tribe(s) and project organization	Meeting face-to-face, and 'Jirga' (favors a win-win solution)	Tribes demand higher profit margins; tribes not allowing access to site until their demands are met	Negotiations with tribes are through a gathering of elders in the form of a <i>jirga</i>
	B	General manager (GM) putting pressure on the PM in attempting to transfer a project team member; or GM attempting to include unqualified persons in the project staff	Confrontation & resistance (favoring a win-lose outcome)	Injustice is sensed in the motives of the GM	As the GM is notorious for engaging in unethical practices therefore the PM feels that blatant resistance is the best option available because any unethical or unjust move by the GM is his personal motivation and not a need of the project
	C	Time consuming meetings and requests for useless reports by the principal organization	Do nothing (avoidance)	Project work is delayed	The project staff feels that they do not have a platform available where their voice can be heard therefore, they choose to do nothing
	E	Disagreement with the tribe over contractor selection or contract award	Meeting face-to-face, and Jirga (favors a win-win solution)	Tribe does not allow access to the site; or tribe attempts to renegotiate their profit margins when an outside contractor is selected	Negotiations with tribes are through a gathering of elders in the form of a <i>jirga</i>
	F	Disagreement over the type of contracting document to be used during the project	Compromising (win-win)	Govt. documentation requirements cannot be applied to the type of project work under performance	Govt. documentation requirements are followed as much as possible, where govt. requirements do not fulfill the project needs other documentation standards are followed
	G	Head office demanding use of PMBOK and MS Project while project staff sees both as a waste of time.	Do nothing (avoidance)	Reports are due	Project staff feels that they do not have a platform available where their voice can be heard therefore, they choose to do nothing
	H	Theft from project site	Meeting with the tribal elders and <i>jirga</i>	Negotiating revenue terms at the time of contract award	Allows both parties to come together and mutually agree to the terms of their partnership
				Miscreants steal project property in the tribal areas	As there is no police force in the tribal areas therefore it is the responsibility of the tribes to protect the project assets

Continued on Next Page...

Section	Item	Interview Case	Negotiation Tactics Used	Used When	Reason for Choosing Tactic(s)
6.5.2	I	Training provider registering students without verifying their credentials	Face-to-face meeting; threatening contract cancellation; monetary penalty	Trainee using false credentials was found attending a training program	Rather than canceling the contract the PM felt it was better to threaten the training provider and impose a monetary penalty
	J	Training provider using inadequate training material, improper training technique, and improper training material	Cancel contract (lose-lose)	Contracted training provider found using material, training methodology, and equipment other than what was proposed to acquire the contract	The PM considers such attempts as cheating and therefore decided to cancel the contract and award it to another party
		Project team feels that they don't have adequate security on the job site and that they aren't adequately insured.	Face-to-face	The project team feels insecure about their wellbeing	The project team is obliged to speak to their GM and are unable to talk to the higher-up's in the organization because of the hierarchical bureaucracy within the principal organization
	B	Conflict between trainees belonging to different religious sects	Accommodating	Trainees from different religious sects refuse to attend a training program together	The request to segregate the training classes is accommodated as not doing so could result in physical violence between the trainees

Informal discussions with the tribes are through a process of face-to-face meetings, while formal negotiations are held exclusively through a *jirga*. Similarly, conflicts with the functional organization are dealt with through a process of ‘avoidance’ i.e. doing nothing. However, the unitary reason for this is that the project team feels that they do not have a platform available where they may voice their opinion. Conflicts with contractors pertaining to pilferage or cheating are dealt with harshly through contract cancellations and penalties. Issues with third-party entities involved in the project are resolved through a mechanism of compromise.

6.6 Project Backgrounds: Low Structural Complexity/Low Task Conflict Projects

The discussion contained in this section is based on data gathered from three case study projects that have a low level of structural complexity and also are expected to have low task conflicts. A presentation logic similar to that followed in sections 6.2 and 6.4 is adhered to through each subsection below, which consists of a table containing key characteristics of the project; followed by a brief background of the project; and concludes with a presentation of its complexity diamond, using Shenhar and Dvir (2007)’s diamond approach, based on data from 86 projects (consisting of 73 different projects) plotted against the perceived complexity of each individual project under consideration.

Please note: As two of the projects included in this section are movie making projects, therefore it would be of interest for the reader to know that the movie industry of Pakistan is located in Lahore and is amicably termed ‘Lollywood’. Lollywood produces movies in most of the regional languages spoken in the country. Interestingly movie production efforts geared specifically towards the production of Pashto language films that present a mix of gore, raunch, and satire are considered Pollywood productions. Pollywood is derived from Peshawar, which is the hub of sale and supply for these movies. All three of the projects described below are low budget productions, which is typical of the local film industry.

6.6.1 Lollywood Docudrama Project

Table 6.15: Characteristics of the Lollywood Docudrama Project

Factors	Characteristics
Setting	Urban
Governance	National Law
Source of Funding	Private
Work Completed (at the time of data collection)	40%
Work Contracted Out	25%
Project Budget	\$3.750 thousand (US)
Number of Project Team Members	2
Number of Contractors	2
Project Status	On-time
Project Financial Status	Within budget
Sector	Entertainment

Lollywood Docudrama is a low budget satirical docudrama about the Talibanization in the region filmed using 8mm videography techniques, produced in a period of three months. Although the budget for this movie is quite low, it typifies the average cost of producing a movie in Pollywood. This is a unique production in that the producer/director of the film is a foreigner while the cast and minimal production crew are native to the region. Crew-members involved full-time in the filming process consisted of the producer/director and a cameraman, while other persons were hired temporarily as needed. The film was edited by the producer/director, while audio dubbing related work was conduct in a hired studio. Interior scenes were shot in the homes of various friends and acquaintances; while outside scenes were mostly shot in nearby villages and barren construction sites within the city. Figure 6.26 exhibits the projects perceived complexity versus the average complexity of similar projects in the region.

6.6.2 Lollywood Horror Movie

Lollywood Horror Movie is an independently produced horror movie, conceived, written, and produced by a schoolteacher. Most of the cast members are high school students, who volunteered their time and were not paid. A few professional actors were cast in the movie and were paid the market wage rate. The movie was filmed in a nature park located in the city's vicinity and in the houses of friends and relatives; most shooting took place right after school hours or over weekends. A professional

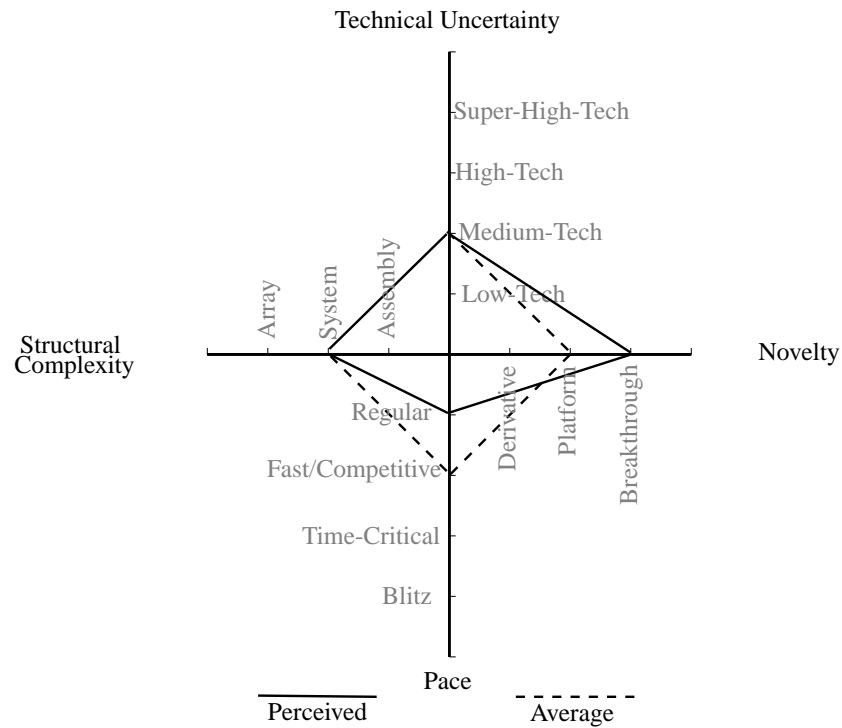


Figure 6.26: Complexity Diamond: Lollywood Docudrama Project

Table 6.16: Characteristics of the Lollywood Horror Project

Factors	Characteristics
Setting	Urban
Governance	National Law
Source of Funding	Private
Work Completed (at the time of data collection)	100%
Work Contracted Out	20%
Project Budget	\$50 thousand (US)
Number of Project Team Members	4
Number of Contractors	3
Project Status	Late
Project Financial Status	Above budget
Sector	Entertainment

cameraman was hired from Pakistan Television (PTV), who also provided directorial support; while, a professional movie editor located in the UK, who happens to be the producer's friends, performed editing work. Interestingly, a significant part of the projects budget was spent on editing and later on promotional activities. The movie took around 6 months to film, which is exceptionally long for a Lollywood movie where on average a film is produced in 5 to 10 days, but that was because of the cast's limited availability. There wasn't a clearly defined budget for the movie, which was due to the producers lack of previous experience in such a project, this

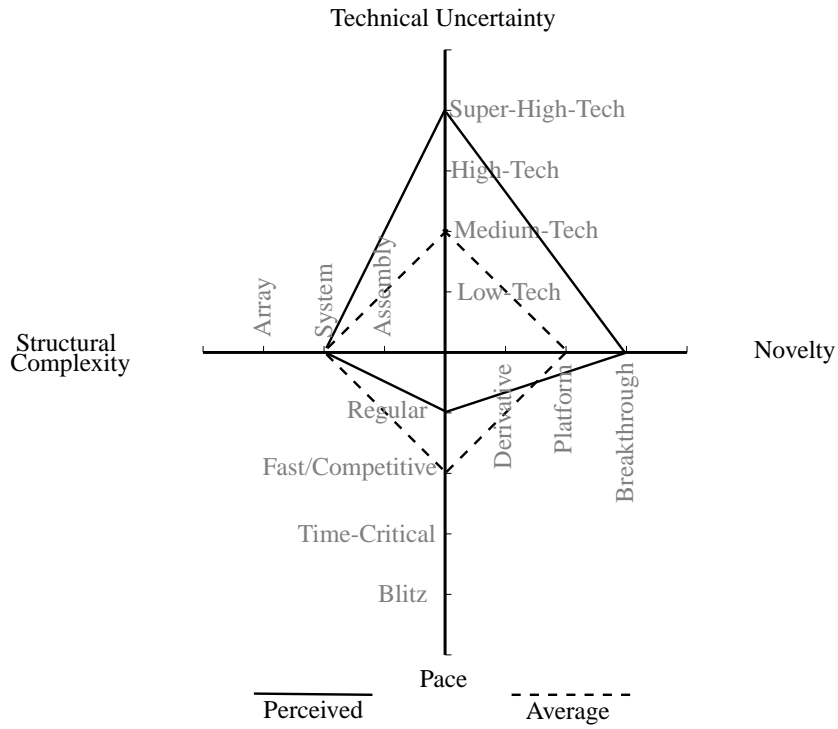


Figure 6.27: Complexity Diamond: Lollywood Horror Project

implied that several times during the filming process the producer had to tap into financing opportunities to continue his work. The movie ended up costing many fold more than what was initially anticipated. Figure 6.27 exhibits the gap between the perceived versus average complexity for the Lollywood Horror Project.

6.6.3 Television Serial Production

Table 6.17: Characteristics of the Television Serial Production Project

Factors	Characteristics
Setting	Urban
Governance	National Law
Source of Funding	Private
Work Completed (at the time of data collection)	70%
Work Contracted Out	5%
Project Budget	\$1.8 thousand (US)
Number of Project Team Members	4
Number of Contractors	2
Project Status	On time
Project Financial Status	Within budget
Sector	Entertainment

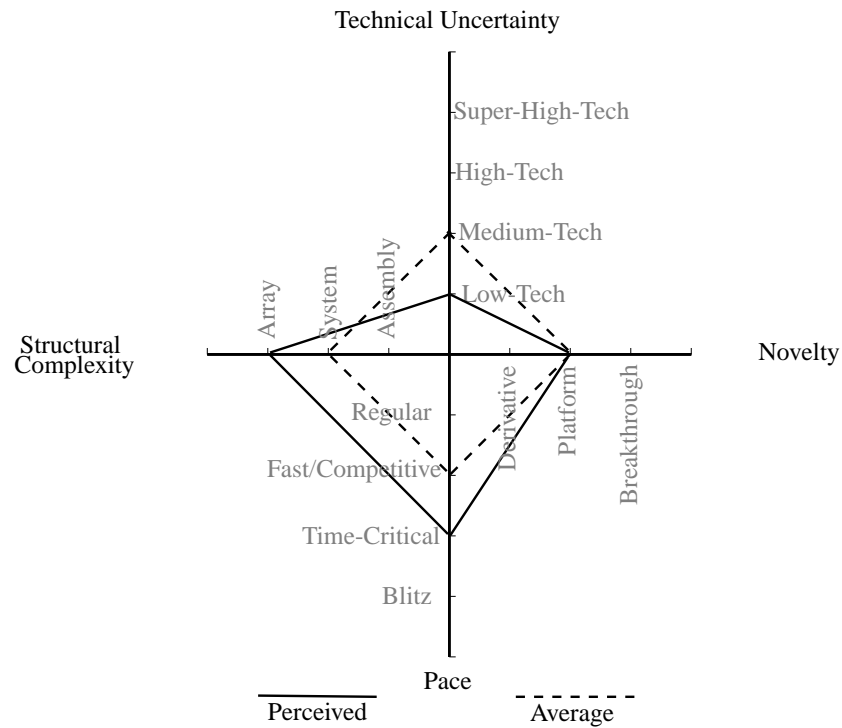


Figure 6.28: Complexity Diamond: TV Serial Project

The Television Serial Production is a project of a privately run television channel. The TV serial is scheduled to run for one season and at the time of our data collection had completed the shooting of and aired 14 episodes. The serial is produced and shot in-house. Most episodes are filmed onsite on locations owned by the TV channel, while a few scenes are filmed around various locations within the city. The cast are employed by the television channel on a contractual basis, where each cast member is paid a nominal fee of \$25 per episode; while, each cast member is provided free pick-and-drop to the studio and shooting locals, as well as free catering during shootings. Stage design, costumes, makeup, and background music is all provided for in house through a number of artisans employed full-time by the TV channel. Budgeting for each episode is the responsibility of the producer, whereas the General Manager of the TV station decides upon the total budget of the project. The producer/director, camera-persons, editing staff, grips are all full-time employees. Figure 6.28 exhibits the difference between the perceived complexity of the TV Project versus the average complexity of similar projects in the region.

6.7 Data Analysis: Low Structural Complexity/Low Task Conflict Projects

This section presents an analysis of the data collected from the projects discussed above. The narrative provided below results from data collected from three projects, of which two are movie projects and one is a television serial production.

Data presented in this section was collected solely through interviews, no documents were examined as none existed. One movie shooting was observed in person, however our observation was interrupted by a violent dispute between the film crew and local villages, as this conflict has legal repercussions therefore it is not discussed further. Interview data was captured using causal maps where themes identified during the survey implementation of this study (discussed in Chapter 5) served as themes for further inquiry.

In order to maintain traceability of data through the section and to prevent needless in-text repetitions, a truncated name in the form of a code is assigned for each project, see table 6.18.

Table 6.18: Codes Assigned to Projects

Project	Code
Lollywood Docudrama	LD
Lollywood Horror Movie	LH
TV Serial Production	TV

Interviewees from each project are identified through a coding scheme, where the project code precedes a unique number identifying each interviewee (e.g. LD-1, refers to respondent 1 from the Lollywood Docudrama). Further elaboration of these codes is provided in table 6.19, which identifies the position held by each interviewee in their respective project and the duration of each interview.

The next section presents an analysis of the data and answers the research questions asked by this study. Research question 1 & 2, because of their interrelated nature are answer together in sub-section 6.7.1; while, research question 3 and 4 are answered individually in sub-section 6.7.2 and 6.7.3 respectively.

Table 6.19: Interviewee Codes and Positions Held Within the Project Hierarchy

Interviewee Code	Position Held	Interview Duration
LD-1	Producer/Director	60 min
LD-2	Actor	30 min
LH-1	Producer/Director	60 min
LH-2	Cameraman/Director	60 min
TV-1	Producer/Director	90 min
TV-2	Assistant Director	90 min

6.7.1 Answering Research Questions 1 & 2

Before I proceed to answering research question 1 & 2 it is important to note that this section follows the same presentation logic as discussed in the beginning of section 6.3.1. As an aide-mémoire research questions 1 & 2 are reproduced next: RQ1 question asks, what drives project conflicts and negotiation and how? While RQ2 asks, how do projects behave in the presence of conflict and associated actions and is there a pattern to this behavior?

Following the logic set in section 6.3.1 the discussion below is presented, in the form of interview experts, categorized according to thematic labels elaborated in tables 6.8 (i.e. land, political pressure, time, utility providers, availability of resources, policies, money & quality, pilferage, cheating & bribery, and law & order), which are derived from earlier empirical work discussed in Chapter 5. It is worth noting that because of the nature of the projects and their limited size, data on some of the categorical labels was nonexistent. This is indicated where appropriate.

(A) Land

No land related conflicts were report by all of the projects included in this case study. This is because the projects were service oriented in their output and there were no requirements on any of the projects to purchase or acquire land.

(B) Political Pressure

Limited political pressure was experienced on one of the movie projects. This incidence involved gaining Pakistan Censor Board's (PCB) approval of the movie, a body that governs what can or cannot be shown in a movie or television program released for general screening within the country. Interestingly, despite the PCB,

the Pakistani cinema industry is notorious for its vulgar productions. One interviewee recounted his experience with the Censor Board. Please note that this example below also provides evidence of possible conflicts arising due to corruption.

[LH-1 & LH-2] *They said my movie was too risqué. I tried to reason but they weren't relenting; one choice I had was to say 'to hell with it' and just release the movie on a CD, but I wanted to exhibit my work in the cinema's...they wasted a lot of my time...it took several trips to their offices and applications to finally get them to listen. When they did I showed them clips of Pashto movies to show them some of the junk they had okayed...this got my case moving. There are clearly double standards within the industry...i.e. for those that have influence or pay versus the rest of us.*

The LD project experienced no conflict with the censor board as the producer intended to release his film to the masses and did so by releasing directly on DVD (a medium of production that is not under the control of the PCB).

A reason for the limited number of reported incidences of political pressure on these projects is their private ownership and self-orchestrated nature, which limits influence from outside parties.

A Causal map of Political Pressure as a driver of project conflict & negotiations is exhibited in Figure 6.29.

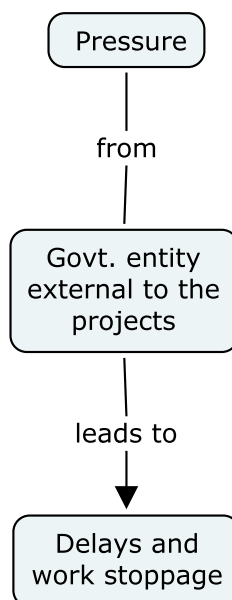


Figure 6.29: Causal Map of Political Pressure as a Driver of Project Conflict & Negotiation

(C) Time

On the LH project time delays were driving conflicts; one such example was presented in section ‘b’. While another example, discussed in ‘g’ exhibits that poor quality work translates into time delays in the project thereby giving rise to conflicts. Tardiness of the movie cast was a concern on one project, because it consumed available project contingencies:

[LH-2] *Our actors and actresses think they are Hollywood stars and are never on time for the shooting. They don't mind keeping 20 people waiting around for them. . . we have a tight schedule, have rented equipment. . . such delays eat into our schedule and if an actual problem arises then we don't have anytime time left to deal with it. I've had plenty of late-nights. . .*

On the other hand short scheduling from the HQ resulted in time related conflicts on the TV serial.

[TV-1 and TV-2] *. . . by the time the HQ gave us the screen plays for the next 4 episodes there was one week remaining for schools to go on summer break. We all of a sudden had 4 episodes to shoot in a week, this included negotiating with the schools to give us access. We talked to the bosses but they didn't listen. We couldn't ask the schools to be kept open until late so we had to breakup into two teams. Unfortunately, one of our camera's had a bad mic so this meant that we had to dub the dialogue in the studio.*

Figure 6.30 exhibits the causal map of time as a driver of project conflict & negotiation.

(D) Utility Providers

None of the projects reported any interactions with utility providers and therefore there were no reported conflicts pertaining to this theme. This was expected, as the nature of the project relationship with the utility providers was simply a supplier-consumer type.

(E) Availability of Resources

Availability of resources was an issue on the project because of the overall negative image of the entertainment industry. One interviewee explained:

[LH-1 and LH-2] *. . . these hardworking people can't tell anyone they work in the theater industry.*

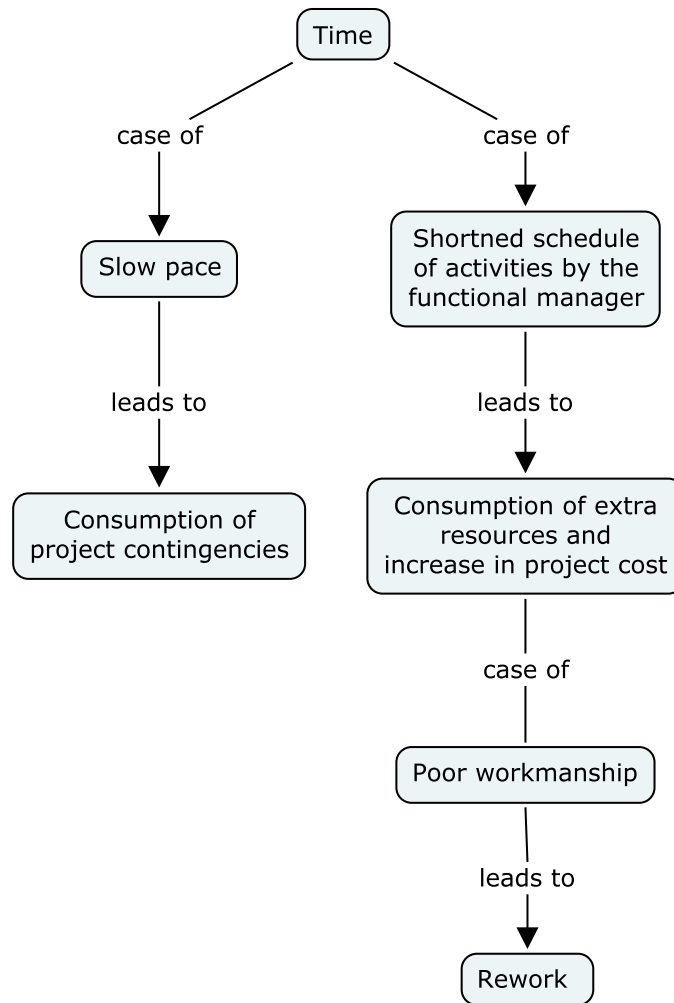


Figure 6.30: Causal Map of Time as a Driver of Project Conflict & Negotiation

This is attributable to the perception in the market that:

[LD-2] ... *anyone working in the arts is a prostitute...*

This turned out to be a source of unique problems on one project where explicit private mobile-phone-videos of one of the lead actresses, who happens to be a part-time prostitute, ended up in the mass market while the project related work was in progress.

[LD-1] *She had to go into hiding as the Taliban were now after her. We didn't want her around the movie site any more either... what if they would come after her here. Luckily we had finished filming her scenes... female actresses are difficult to find here because of the culture and perverse image that industry has created for itself.*

Lack of educated actors was also problematic on one project, as an interviewee explained a situation where one of his cast members consistently mispronounced words or spoke in improper grammar because she had received no formal schooling:

[TV-1 and TV-2] ... results in a lot of rework for me, as she has to be coached all the time... I also have to be on guard to make sure she didn't say something wrong. Sometimes, we don't catch a blunder but later on during editing we find it, we have to then get her to come and act the scene again or do a voice over.

Other factors contributing to limiting the resource availability included the talibanization in the region, examples related to which are provided in sub-section 'j' on law & order. A causal map of resources availability as a driver of project conflict & negotiations is exhibited in Figure 6.31.

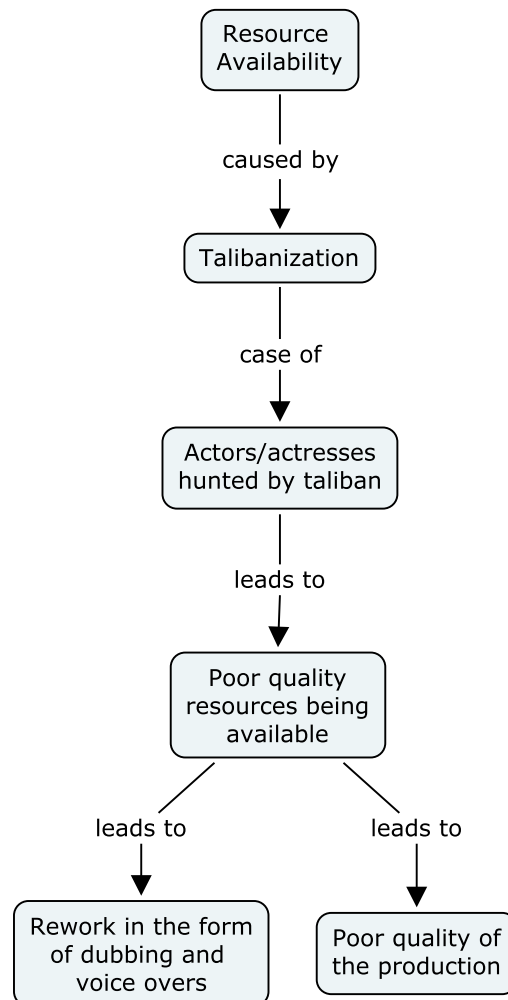


Figure 6.31: Causal Map of Resource Availability as a Driver of Project Conflict & Negotiation

(F) Policies

On one project conflicts were attributable to flawed or unclear policy and associated practice. One such example is the issue encountered by LH project with the CBP,

discussed in sub-section ‘b’. Conversely, the LD project decided not to be encumbered by the policies of the government and released their movie into the market directly on a DVD.

On the TV project production decisions trickled down to the producer from the CEO; these directives were followed without question.

[TV-1 and TV-2] *The CEO tells us what to do, we have to follow whether we like it or not.*

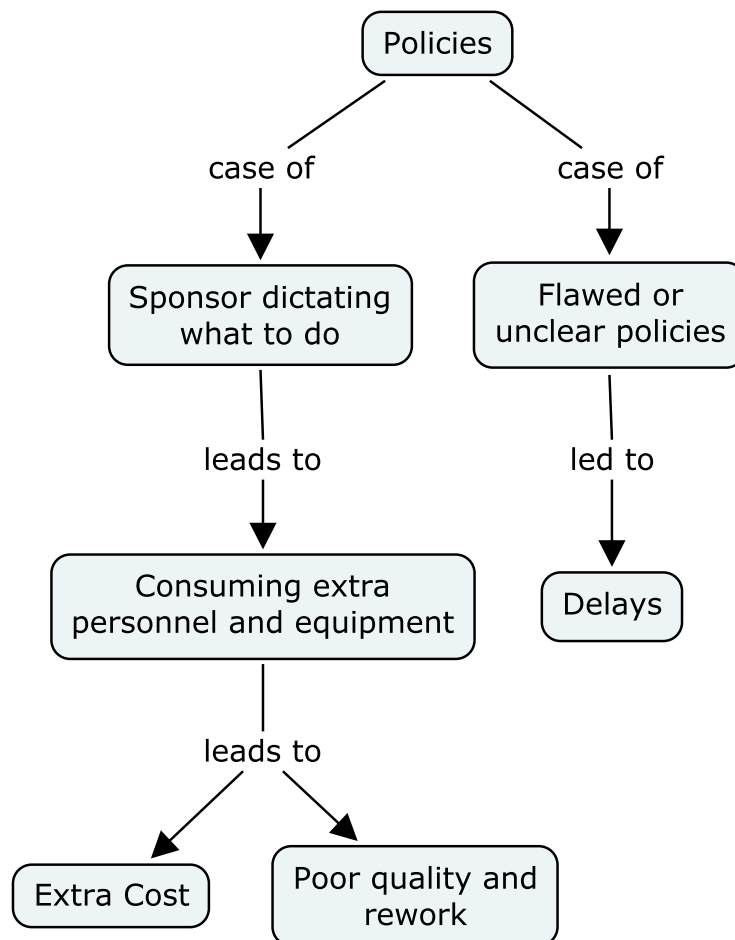


Figure 6.32: Causal Map of Policies as a Driver of Project Conflict & Negotiation

(G) Money & Quality

Financial concerns were present in all the projects however these pertained mostly to concerns of managing the budget and controlling the projects spending; rather than financial conflicts of the type of interest to this study. A possible reason for this

in that both the LD and TV projects operated under a fixed budget, which meant that spending on the project was limited to the essentials and purchasing choices severely restrained. Therefore, the producers were extremely careful in making purchases and preferred to do the work in-house where possible e.g. on the LD the producer himself did the editing work, while on the TV project it was performed by permanent staff of the channel. While, on the LH project the producer/director being a novice was obligated to hire professional editors and camera-persons, who also provided directorial support.

All the projects were of the opinion that because of their limited project budgets their projects suffered from poor quality. One interviewee explained through an example:

[TV-1 and TV-2] *I have two choices, to cast an actress who is educated and is able to deliver the dialog quickly and without mistakes or to hire one who is uneducated and makes multiple mistakes each time. I would prefer the first as she's a professional but I have to go with the second choice because she's cheaper to employ.*

Another interviewee told of an experience where he had to change a costume maker that was contracted for the project because:

[LH-1 and LH-2] *...he was providing such cheap quality costumes that some would rip during the shooting and we wouldn't be able to reuse them. I was paying him three times more money than what other tailors were asking because I needed them quick...ended up going to him twice or three times a day because he wasn't providing them at the times committed to...eventually I tried another tailor at random and found that he did the work better, faster, and cheaper...rather than getting into a contract with anyone, I would just go to different people and get them to do the work.*

A causal map of Money & Quality as drivers of project conflict & negotiation is provided in Figure 6.33.

(H) Pilferage

No cases of pilferage were reported by any of the projects. This was also expected considering the limited use of physical assets used during production.

(I) Cheating & Bribery

No cases of bribery were reported by any of the projects. Although, as expressed in the interview excerpt provided in subsection 'b', which relates to political pressure,

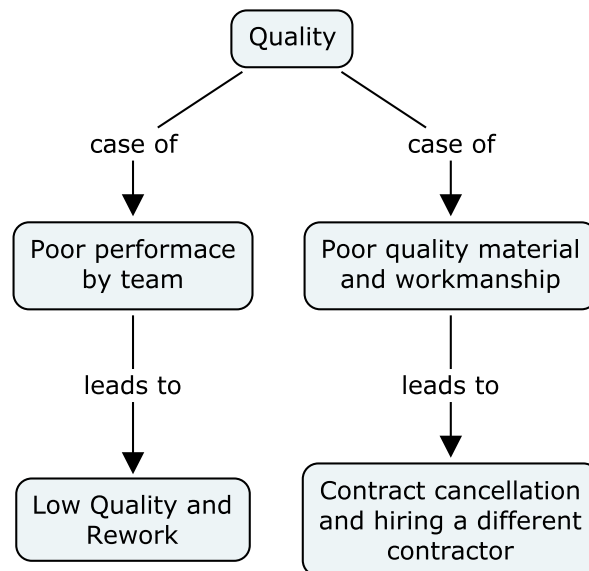


Figure 6.33: Causal Map of Money & Quality as a Driver of Project Conflict & Negotiation

there was a possibility present of bribe giving in the project's interactions with government departments; however, no incidences of bribery were reported. Whereas, an incidence of cheating where a contracted party was providing below quality has already been discussed in sub-section 'g'. However, as the reported incidence on cheating was consequential in causing quality issues we do not regenerate its causal map.

(J) Law & Order

Law & order issues have wreaked havoc on the local movie industry. One such example was provided in section 'e'. Similar comments were made by all the interviewees, most providing examples of famous actors, actresses, and musicians who have either been killed, fled the country, gone into hiding, or 'repented' their past and sworn off the movie industry.

[LD-2] *many of my friends and colleagues have been targeted just because they were actors. I fear for my life all the time...we have talked to the govt. over and over again but they are doing nothing to protect the industry or us. Consequently limiting further the already limited human resources.*

Figure 6.34 displays a causal map of Law & Order as a driver of project conflict & negotiations.

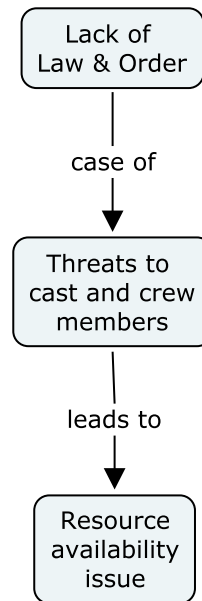


Figure 6.34: Causal Map of Law & Order as a Driver of Project Conflict & Negotiation

6.7.2 Answering Research Question 3

In this section, following the presentation logic established in section 6.3.2, I answer the third research question posed by this study. The discussion contained here concerns itself with the role of culture in how projects function while experiencing conflicts & engaging in negotiations.

Out of the three projects included in this section, two qualify as culturally heterogeneous according to the working definition adapted by this study. However, because of the small size of both these projects, and considering that the heterogeneity comprising these projects is limited to one person on each project, renders these projects unfavorable for drawing any significant conclusions. Having verbalized the factors limiting this analysis, I did find some behavior that is particular to a project which is culturally heterogeneous.

As expressed in section 6.7.1 subsection ‘e’, which pertains to conflicts arising due to resource availability (or more accurately, the lack thereof), there are significant conflicts within the projects. In comparison to projects that are culturally homogenous, the culturally heterogeneous projects are more flexible and amicable to trying out new ideas in order to reduce the impact of a lack of resources on the project. One such example pertains to the LD project, which took the risk of replacing its cameraperson with someone having absolutely no formal training in moviemaking right off the street.

[LD-1] ... *I had hired this camera guy who came highly recommended but during the first few hours of shooting with him I understood he wasn't going to work. . . it's funny, but a young guy hanging about watching us make the movie kept guiding the cameraman [sic]. I ended up hiring the guy off the street, he turned out to be a brilliant photographer who had God given talent.*

Additionally, when resources or quality was lacking the culturally heterogeneous projects were open to learning and applying movie making skills in house rather than outsourcing them. As an example, on both the LD and LH projects the producer was also the director and cameraperson. Also, on the LD project the producer himself edited the video footage rather than outsourcing it. Where needed, both the projects opted to spend significant funds on hiring or acquiring the best goods or services for their projects. Perhaps, this is one reason there were so few quality related conflicts reported by both projects.

6.7.3 Answering Research Question 4

The fourth research question asked by this study is interested in knowing what negotiation tactics the project teams use and when & why they are used. This section follows the same presentation logic as sections 6.3.3 and 6.5.3. Data addressing this research question is presented in table 6.20.

Some patterns that are similar to those found in sections 6.3.3 and 6.5.3 are discussed next. In case of conflicts with the functional organization (based on data gathered from the TV serial project) the project staff chooses to avoid the conflict by offering no resistance and doing as told. The reason for adopting this course of action is because the project staff feels that they do not have a platform from which their voice could be heard.

In cases of conflicts with contractors related to poor quality workmanship or material the project staff chooses to confront the offending party. If an amicable solution cannot be found the project staff resorts to canceling the offending party's contract.

Table 6.20: Negotiation Tactics Used in Privately Financed Service-Oriented Projects: The When & Why?

Section	Item	Interview Case	Negotiation Tactics Used	Used When	Reason for Choosing Tactic(s)
Section 6.7.1	B	Disagreement with the PCB	Correspondence with the PCB and Meeting face-to-face	PCB would not provide a board clearance certification	There was no option but to meet with them amicably and present our case. Alternative was to go to court
	C	Cast members are late to shootings	Confrontation	Project work is delayed	There is no other option than to put pressure on them. We can't let them go midway through the movie
		Extraneous time consuming demands from the main office	Do nothing (Avoidance)	Project work is not achievable in time	The project staff feels that they do not have a platform available where their voice can be heard therefore, rather than risking their jobs they agree to do the work
	F	Decisions being pushed down from the main office	Do nothing (Avoidance)	Project work is dictated down	Same reason as above
	G	Poor quality work of one cast member	Compromise	There are budgetary constraints or when alternative cast members are not available	There is a severe shortage of human capital in the industry
		Poor quality work by costume designer	Confront (win-lose)	There is visibly poor quality in the product	Alternative costume designers were available who were cheaper and produced better quality

6.8 Conclusion

This chapter answered the research sub-questions posed by this study from the perspective of nine different projects. In concluding the chapter I seek to consolidate the findings presented above and present a holistic view of how the various conflicts & negotiations taking place across the case projects contribute to project complexity.

As discussed in Section 6.3 the causal maps presented in the sections above are extracted from the actual causal maps created during the interviews. The creation of these extracted maps included a simple process of extracting only those concepts from the causal maps that presented a cause-and-effect relationship within the data. Additional information supplementing the causal links was suppressed from the maps and presented in the form of interview excerpts. Although the extracted causal maps exhibit the linearity present within the data they fail to present the interconnections between the different concepts when presented individually. However, by combining the different extracted causal maps we are able to explore the interrelationships and loops within the data. Details on how these maps are combined are discussed next.

As discussed in section 6.3.1 the data presented in this chapter is founded on the categorical themes presented in table 6.8. A figure consolidating all the causal maps presented in this chapter is provided in figure 6.35. The process of consolidating our causal maps entailed combining the maps based on the categorical themes as pivots (displayed in figure 6.35 as ovals). In an effort to increase the readability of the diagram the messiness within the diagram is reduced by displaying only the initial cause and final effect from each of the extracted causal maps being combined i.e. the first and last element from each figure. Please note that this is done for display purposes only, an unabridged version of the diagram is used for further processing using Banaxia Decision Explorer (discussed below). Further more, traceability between figure 6.35 and the causal maps comprising it is maintained in two ways: (1) by assigning each concept oval with a unique alphabet identified (e.g. ‘L’ for Land, ‘RA’ for Resource Availability etc.) and (2) by assigning each element of the figure with a unique identifier corresponding to its placement in Table 6.1. For example, the identifier ‘1L’ implies that the element is from a high complexity/high conflict project and belongs to the ‘land’ concept oval. Similarly, a number two would represent medium complexity/medium conflict projects, and a number three would be low complexity/low conflict projects. In addition, any similar concepts within the

figure (e.g. slow pace of work and time delays) are linked together via straight lines that are annotated with the words ‘linked concepts’.

In addition to visually exhibiting how the various drivers of conflict & negotiation act in establishing the case projects’ complexity, Figure 6.35 aids our understanding variously. An immediate consequence of the figure is that it allows us to determine which conflict & negotiation drivers are the most active on the case projects. This is achieved by examining the density i.e. number of interconnections directed towards or away from a particular categorical label node and by looking for loops within the data. To achieve this objective an unabridged version (i.e. where none of the causal links are suppressed) of Figure 6.35 was processed using the Banxia Decision Explorer software (discussed in Chapter 3). The output generated using Banxia Decision Explorer is explained below.

The first step was to process the figure to identify the most central concepts within the dataset. These are presented in descending order in Table 6.21. The number of links in the table refers to the number of causal links pointed towards or away from a given concept. Please note, that similar concepts were merged while calculating the number of links, e.g. delays and slow pace of work were consolidated as the latter leads to delays. Similarly, the concepts of money and slow release of payments were merged.

Table 6.21: Centrality Scores of Concepts

Concepts	Number of Links
Delays	53
Quality Issues	46
Money	40
Resource Availability	26
Policy Issues	20
Jirga	17
Pilferage	15
Cheating	15
Escalation	12
Political Pressure	10
Bribery	7
Law & Order	6
Utility Providers	2

Table 6.21 shows that the most central concept within the dataset is that of delays in project work, which is followed closely by quality and money issues. These are followed by the concepts of resource availability and policy issues, and the concepts of pilferage, cheating, escalation, and political pressure. While the least prevalent concepts are those of bribery, law & order and utility providers. Hence, it may be concluded that project conflict & negotiation contribute to project complexity mostly through the introduction of delays, quality issues, money issues, and the availability of resources.

In the next step the dataset was analyzed for the occurrence of loops. Decision explorer found a distinct relationship within the dataset between the concepts of quality and money and quality and rework. Where, four of the identified six loops within the data exhibited a direct relationship between quality and money and four exhibited a relationship between quality and rework (out of these, two were further found leading to conflict over money).

The relationship between conflicts over quality and money is such that it requires some explanation, which is best provided in the interview excerpts narrated through this chapter. The nature of this relationship is three fold: (1) conflicts arising between the project team and contractors because of poor quality of work, result in the project manager stopping payments for the work performed until the problem is resolved, (2) conflicts over poor quality result in further conflicts in the form of money conflicts, where the offending party (in this case the contractor) objects to the rework necessary on the grounds that they do not want to bear the added expenses, and (3) contractors attempting to recover the expenses incurred as a result of rework by reducing the quality of other components on the project, or by demanding additional funds by issuing escalation claims. In the case of item 1 above, payment stoppages by the project manager were consequential on the projects in that the contractors responded by stopping the project work. Thus, quality conflicts were not only leading to money issues but also giving rise to delays and malpractices. Further more, conditions such as purposefully delaying work, false escalation claims, contract violations, poor quality etc. resulted in initiating formal negotiation activities such as 'jirgay' (i.e. gather of elders). The second set of loops in the dataset indicated that rework conflicts played an intermediary role in the relationship between quality and money conflicts. How rework conflicts lead to money conflicts was discussed in the paragraph above.

From the discussion above, generalized loops can be developed, these not only explain how one type of conflict on the project leads to another, but also how feedback from one area impacts another. A generalized loop diagram is presented in Figure 6.36. This figure is developed by looking at the loops identified earlier using Decision Explorer and combining them together using the cause and effect relationships between them, which was discussed in the paragraph above. The term ‘malpractices’ is used in the figure to encompass instances of cheating, bribery, and pilferage. The term ‘cancellations’ refers to the cancellation of a contract. Interestingly, delays, quality, and money conflicts are pivotal conflicts within Figure 6.36 based on their initiating or mediating roles (see paragraph above), which agrees well with the list of central concepts presented in Table 6.21.

It should be noted that not all the loops presented in Figure 6.36 are the same. As explained in Williams (2002, 2005) some loops are ‘vicious’ i.e. produce unwanted and bad consequences, while other are ‘virtuous’ i.e. produce good consequences. The virtuosity or viciousness of the loops in this case may be determined by looking at the interview excerpts contained in this chapter. In case of quality and money, quality and rework, quality and delays, and money and delays, the case study data contains examples of both virtuosity and viciousness. Whereas, in the case of money and malpractice, delays and cancellations, and quality and malpractice the examples are mostly of viciousness.

Figure 6.36 could be simplified further using a process of decomposition as proposed by Williams (2002). Which results in deciphering which components of a diagram are actually feedback loops and which are simply causal chains – the former are those where the causal chain returns to form a loop. As a result of decomposing Figure 6.36 using Decision Explorer, two feedback loops emerge: (1) between quality, money, and rework and (2) between money, malpractice, and quality. Both these positive feedback loops are consequential to projects studied in that they contribute to the creation of a vicious cycle of events within the projects. These cycles of events result in consuming time, effort, and finances of a project. Additionally, if the project management team is unaware that it is stuck in a positive feedback loop the consequences of their actions will be intensified and re-presented to them in the form of feedback. Thus, the conflict & negotiations occurring across the two positive feedback loops identified above contributes to complexity of the case projects included in this study.

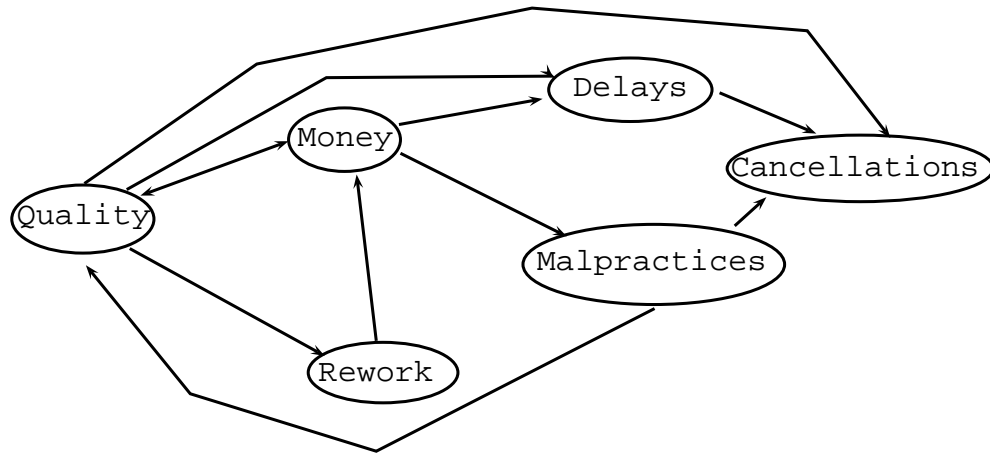


Figure 6.36: Generalized Loops

It is pertinent at this point to reflect against the research questions posed by this study in light of the findings presented above. The research questions asked by this study are reproduced below to facilitate the reader, see Table 6.22

Table 6.22: Research Questions

Primary RQ:	Do conflicts and negotiations make a project complex, or is it that projects that are already complex have more conflicts and negotiations?
RQ1:	What drives project conflicts & negotiations and how?
RQ2:	How do projects behave in the presence of conflict and negotiated actions? And is there a pattern to this behavior?
RQ3:	Does a project having a heterogeneous cultural makeup experience conflict differently than a project with a homogenous cultural makeup, and if so how?
RQ4:	How does a project team working in a project experiencing conflicts manage the conflict? What negotiation tactics do they use, when do they use them, and why?

The first research question i.e. RQ1 has already been answered in chapter 5 and will therefore not be discussed here. The second research question (RQ2) asks about the behavior of project in the presence of conflict & negotiated action. Data presented in Table 6.21 shows that projects respond to conflict & negotiated actions by getting delayed, exhibiting issues of quality, money, and resource availability etc. As to whether there is a pattern to this behavior, the answer is yes. Such patterns are present in the loops within the dataset i.e. the loops exhibiting a link between quality and money issues and quality and rework.

The discussion contained in this chapter was not able to find data to examine the relationship between a project's cultural makeup and how it experiences conflict & negotiation and is therefore not going to be discussed further. The last research (RQ4) question asks how project teams experiencing conflict & negotiation manage the conflicts. This research question has been answer in the discussion in tables 6.8, 6.13, and 6.19, which exhibited the reaction of the project team to conflict using Blake & Mouton's conflict styles (previously discussed in Chapter 2). However, it is pertinent to note that the concept of 'jirga' negotiation played a significant role within the dataset. A possible reason for this is the tribal based geographical placement of the projects included in the case study.

Lastly, the primary research question asks whether conflict & negotiation during projects make a project more complex, or is it that projects that are already complex have more conflict & negotiations. The answer to this question is that project conflict & negotiation make the projects more complex via the introduction of recursive loops within the project activities such as delays, rework, and money issues. These projects become further more complex through the affects of the ongoing conflict & negotiation within the projects on resource availability, pilferage, cheating, bribery, political pressures, jirga's etc.

Further, discussion on the findings presented in this chapter is presented in Chapter 7.

Chapter 7

General Discussion

7.1 Introduction

This chapter presents a discussion based on the data analysis contained in Chapters 5 and 6 and is structured such that: Section 7.2 presents a discussion on the findings of the study using Jürgen Habermas' (1984) Theory of Communicative Action (TCA). The choice of using Habermas' TCA to extend the discussion was made clear in Section 3.10, while pragmatic concerns pertaining to TCA are described in Section 4.14. Section 7.3 provides a general discussion on the findings of the study. Section 7.4 identifies potential areas of work stemming from this research, and Sections 7.5 and 7.6 closes the chapter.

7.2 Discussion through the Lens of Habermas

This section discusses the data through the lens of Habermas' TCA and is structured such that subSection 7.2.1 discusses research questions 1 & 2, subSection 7.2.2 discusses research question 4, while subSection 7.2.3 concludes the discussion. Research question 3 is not discussed in this section because of its focus on culture, which is an extrinsic variable outside of the control of TCA.

7.2.1 Discussion on Research Questions 1 & 2

The objective of this section is to discuss the data using Habermas' concept of the Cognitive-instrumental Rationality and Communicative Rationality (see Section 4.14). However, before moving the discussion forward I, as an aide-mémoire,

briefly outline each research question and then identify where in the thesis they were answered. RQ1 asked ‘what drives project conflict & negotiation and how?’. Answer to the question ‘what drives project conflict & negotiation?’ sought, as discussed in table 3.3, a quantitative response and was answered in Chapter 5 section 5.5.1. While answer to the question ‘how do these drivers drive project conflict & negotiation?’ was answered in Chapter 5 section 5.5.2 and Chapter 6 sections 6.3.1, 6.5.1, and 6.7.1. RQ2 asked ‘how do projects behave in the presence of conflict & negotiated actions? Is there a pattern to this behavior?’ and was answered partially in Chapter 5 section 5.5.2, while a more detailed answer from the perspective of the case study projects was provided in Chapter 6 sections 6.3.1, 6.5.1, and 6.7.1.

The discussion presented below first discusses RQ1 & RQ2 using the Cognitive-Instrumental Rationality view and then follows with a discussion from the perspective of Communicative Rationality. A concern taken up during the discussion is whether the rationality conveyed by the case study respondents is contextually valid and to discuss whether the ‘stimulated responses’ exhibited by the project personnel as a result of their adopted ontology (instrumental or communicative) make sense.

Cognitive-Instrumental Rationality View of RQ1 & RQ2

Cognitive-instrumental Rationality (CIR) according to TCA strives for instrumental mastery. Thus, an immediate concern in discussing research questions 1 & 2 is to examine the instrument(s) on which the case study projects’ rationality is founded. In examining evidence collected during the case study implementation the presence of an instrumental reality (or ontological view) underlying publicly financed projects is evident. This reality is composite in nature in that it encompasses the use of general project management techniques along with regulatory requirements pertaining to proposal writing, monitoring, project cost revisions, closure, purchasing, and contracting developed by various regulatory or standard making bodies. See project background information provided in sections 6.3, 6.5, and 6.7 for details. For a discussion on the instrumental reality in projects in general see Chapter 2.

Evidence of the existence of a cognitive-instrumental rationality and its affects within projects is present within the case study projects. Some of the conflicts on the case study projects occurred because there were differing goals defined by the parties involved, thus violating Habermas’ validity criteria of rational action, which

states that goals have to be mutually agreed to and have to be achievable (see Section 4.14). For example, the duality of compensation packages (see Section 6.3.1 'A') and divergent preferences involving the project team and tribal beneficiaries results in a situation of conflict necessitating negotiation. The existence of choices and lack of recommendations for the project team regarding what choice to make in a given situation is an inherent policy flaw and a potential conflict driver. This is because the choices made by the parties may be driven by opposing. Left unresolved these may give rise to 'stimulated responses' from the parties e.g. cheating (see case of false graves and plantations) or a tribe refusing access to the land or resource (discussed in section 6.3.1 'I'). Negotiations are further complicate because the project teams are ill-prepared to respond appropriately, consequently leading to inconsistent responses from the parties involved, e.g. token penalty applied to the contractor for violating a contractual obligation (discussed in section 6.3.1 'I').

All the case study projects that engaged in negotiations with the local tribes indicated that the *jirga* was the only mechanism for negotiations with the tribes (see Sections 6.3.1 & 6.5.1). However, several interviewees from the government sector projects indicated that there was direct contact with the tribes or individual members of a tribe and that both parties preferred informal negotiations. This indicated that a *jirga* was not the only way to negotiate with a tribe, rather evidence indicates that it is preceded by a series of informal negotiations. Use of the *jirga* as a system for conflict management is based on an instrumental rationality world view purported by the Frontier's Crime Regulation (FCR) of Pakistan. However, the dynamic nature of the *jirga* and the reality in which projects operate renders its outcome unpredictable because the parties in conflict have the ability to influence the *jirga*'s decision through out its deliberation process. Problems are compounded when the assumption that *jirga* decisions are final and binding on all parties is itself violated and the parties begin to renegotiate on an issue that had been resolved earlier e.g. sections 6.3.1 & 6.5.1 detail many examples of tribes continuing to negotiate after a negotiated settlement has been reached. Since, none of the respondents reported having attended a *jirga* nor could most identify a person in their organization who attends one on behalf of their project, the *jirga*'s role in resolving project conflicts is questionable. Rather, from a communicative rationality perspective more value is attributable to the stream of informal negotiations taking place with tribal individuals, groups, or clans. Some evidence was provided that identified the Polit-

ical Agents (PA) in the tribal agencies as the persons responsible for constituting the *jirga* and representing the government during its proceedings. However, this added an additional element of complexity to the negotiation activity as now the negotiation effort had to cope with another level of self-interest i.e. that of the PA himself [*sic*] along with interests of the tribal and project personnel. Involvement of the PA in the negotiation process, as indicated by several respondents, violated the validity of the negotiation process as the PA engages in power struggles and bribery while representing the government in the context of the project.

Some respondents directed attention to the imposed use of standardized project management methods on the case projects, which lacking consensual agreement between the project personnel and their principal organizations, was a cause of conflict. True to Habermas' (1984) conjecture, the lack of agreement between project personnel and main office staff regarding adoption and use of standardized management practice was due to limited mutual understanding. Evidence provided in Chapter 6 from the VEP project detailed the mismatch between the project principal's motivation behind the choice of using the PMBOK and the project teams perception of the benefit it imparted.

Matters are complicated further as the respondents felt there was no platform available where they could voice dissent, indicating the incontestability of the project sponsor's decision. This gives rise to internal strife and creates favorable conditions for misguided 'stimulated responses' to arise on the project. One such example pertains to the payment for work and reimbursement release process employed during one of the projects, where the policies and rules adopted by the project principal were causing delays in the project workflows and driving conflicts between the project team and contractors as well as between the project team and main organization. As a 'stimulated response' the contested process is bypassed by the project personnel, thereby, rendering it as no more than an on-the-books activity that needs to be performed rather than an activity that contributes positively to the project. Concerns regarding the mismatch between the project workflows and complex reality have been discussed in the literature, for example see Alvesson and Deetz (2000).

Further evidence from the case study projects reveals evidence of the explicit and implicit use of an instrumental rationality within projects. Explicit use of the instrumental rationality occurs when an ongoing conflict is reflected on against some preexisting rules, for example: The manner in which price escalation claims are han-

dled i.e. via reference to PEC/FIDIC guidelines for resolution; or the mechanism through which payment is made for use of land and associated resources via reference to PEC rules; or the process through which release of payments are processed via reference to internally developed project management practices. On the other hand a variety of examples provided evidence for the existence of an implicit usage of the cognitive-instrumental rationality, by this I mean, those instances where the project practitioners were engaging in a conflict or negotiation activity using processes that were loosely defined. Examples of the implicit use of the instrumental rationality include: conflicts with the tribes being referred to the *jirga* system of conflict resolution, without being clear about the actual contribution of the *jirga* process; or engaging the Political Agent as an agent during the negotiation process because his/her involvement is required by law, but not being clear as to the precise role they are to play during the negotiation process etc.

Problems arise when the normative nature of the instrumental rationality clashes with the complex nature of reality in which the projects operate. Examples of such behavior were found throughout the ten categorical labels derived from the work conducted in Chapter 5 and implemented in Chapter 6. For instance: unique issues caused by the prevailing law & order situation in the region; the political influence exercised during the projects; and acts of bribery or cheating during the project etc.

Additionally, reality is complicated by the existence of a duality of governance mechanisms, where the project staff have to abide by national laws of the country while at the same time reach amicable agreements with the tribes (using tribal laws) for the purpose of securing permission to perform work in tribal localities. Thus, the instrumental world view and its associated rationality works to a certain extent in mitigating conflicts in the context of the projects studied in the case study, but the efficiency it seeks to achieve by normalizing a project's behavioral responses in situations of conflict quickly runs into problems when extraneous situations of conflict not covered by the rules arise. Habermas' (1984) calls to the validity of rationality are upheld in situations where the conflict & negotiations are dealt with in clear terms that both parties agree to, while the validity of rationality is questionable in situations where one party engages in unethical behavior as it is contrary to the common understanding needed for validity to hold. In conditions where the validity of the instrumental rationality is violated, one option is to do nothing more and adhere to the rules, unfortunately this leads to adverse effects, several examples

of which are discussed in Table 2.1. Therefore, such a stance is not favorable and not recommended, rather the literature proposes that further actions are required to reduce any damage that such situations may cause (De Drue, 2008). A better option then is to engage with the conflicting parties and strive for resolution; a process that requires adoption of a completely different ontological position and rationality, this is discussed next.

Communicative Rationality View of RQ1 & RQ2

In comparison to Cognitive-instrumental rationality, Communicative Rationality within the case study projects was not as explicit and readily identifiable. However, evidence presented by the respondents did not deny its existence, for it pervaded all projects regardless of whether they subscribe to the Cognitive-Instrumental view of reality or not. Presence of the Communicative Rationality was most evident during project conflict & negotiation when a Cognitive-instrumental Rationality was absent or its validity was challenged. Existence of a rationality that is effectively communicative in its nature is acknowledged in the literature review presented in Chapter 2 e.g. see Cicmil (2006), Cicmil & Hodgson (2006a), Bresnen et al. (2005), Pryke & Smyth (2006), and Smyth & Pryke (2008).

Evidence gathered from the case study projects indicates that transition between where the Cognitive-instrumental Rationality stops and Communicative Rationality begins is the root of some conflicts. For example, conflict between project principals and tribes were seen to arise where rules allowed for options, such as on land usage reimbursement issues. Such disagreements evoke ‘stimulated responses’ causing standoffs that necessitate negotiated settlement. However, as those involved in negotiations attempt to arrive at communicative understanding of their problems their actions give rise to further ‘stimulated responses’ and so on. Unfortunately, the Communicative Understanding needed to resolve a conflict is not easy to achieve. For example, the process of communication in a *jirga* may involve individuals, groups, clans, or tribes as a whole; each adding an additional level of complexity to the process. Hence, ‘stimulated responses’ may be more forthcoming than the Communicative Rationality based actions needed to resolve their ill effects.

At other times failure of instrumental Rationality leads to exercise of Communicative Rationality within projects, for example on the case study projects contrac-

tual violations considered to be breaches of trust necessitate negotiation between the parties. Matters are complicated, however, when an opportunity for debate is quashed by the exercise of power by a stronger party i.e. a complete failure of rationality. An example was provided by one respondent of such an abuse of power that included ‘transfers’ of non-conforming team members to other project, sites, pay cuts, loss of promotion opportunities, and loss of benefits (detailed in section 6.3.1 ‘B’). This is an alarming situation for the project indicating a failure of both the Cognitive-instrumental and Communicative Rationalities. Other failures of rationality include demands for bribes and other benefits by those in power, see Section 6.3.1 ‘D’. In such situations the project teams were seen taking innovative actions to keep their work moving along. However, such conflict coping mechanisms are beyond the scope of this work and are therefore not discussed.

7.2.2 Research Question 4

The concern taken up in RQ 4 pertained to the use of negotiation tactics used by project teams experiencing conflicts. The objective underlying the research question was to unravel when and why the chosen negotiation techniques are used. Data collected in response to RQ4 is presented in sections 6.3.3, 6.5.3, and 6.7.3, which is founded on the results of the survey discussed in Chapter 5. The discussion below is presented using the Habermasian concept of ‘life word’ from the TCA (discussed in detail in Chapter 4), for the reason that it allows us to discuss the contextual validity of the negotiated actions.

Analysis of the survey data presented in Chapter 5 identified that formal negotiations are preceded by certain activities, these in order of prevalence are:

- Communicating with the other party to establish an understanding of the issue at hand.
- documenting the existing conflict (achieved through a process of serving notices, or orders to terminate contractual agreements, or issuing show-cause notices etc.).
- speaking with the project organization’s upper-management to determine if negotiations are to be pursued and, if so, to determine its boundaries.

The termination of pre-negotiation activities is followed by the start of the actual negotiation process, which may take place during informal or formal meeting with the parties involved.

Interestingly, the case study data reveals that different negotiation tactics are used during the projects when interacting with parties that are: considered the project's upper management; project contractors; tribes whose land and other resources the project requires; and a project's internal staff. These are discussed individually next.

Negotiating with the Principal Organization

Several examples were provided during the case study interviews that relate to negotiations taking place between project personnel and members of their principal organization, discussed in: Table 6.9 Items B and F; Table 6.14 Items B, C, F; and Table 6.20 Items C & F. Except for one recorded instance, an answer of 'do nothing' was received from all the case study projects in response to conflicts with the principal organization. Developing conflicts between the project team and principal were referred to the project principal in the form of 'requests' for advice or action.

A 'do nothing' response to conflicts with the principal organization was justified by the project personnel on the basis of fear of job loss, getting transferred to other projects located in distant locations, losing out on promotions, and losing any accrued benefits etc. Therefore, rather than responding proactively to such conflicts the case study project teams adopted a stance of no resistance and allowed the project principal's actions to go unchallenged. Although, a 'do nothing' response exhibits, in the words of Habermas, 'contextual intelligibility' because the perceived threats are akin to 'quasi actions' i.e. they have the potential of becoming actions and are therefore, as suggested by TCA, considered real. However, at the broader level of a 'life world' (defined earlier as a unitary world created by the shared understanding and beliefs of the community) a 'do nothing' response is not useful because it is a potential instigator of further conflicts e.g. see Tables 6.9, 6.14 and 6.20 for instances where unmanaged conflicts could spawn further conflicts. In contrast, the response of referring matters to the case study project's principal in the form of requests for advice or action exhibits contextual validity i.e. in the context of the 'life world' as it strives to uphold open communication and interaction.

Negotiating with Project Contractors

Negotiation tactics used by project teams when dealing with contracting parties are detailed in Table 6.9, Items D, G, I, & Item B (in the second part of the table), Table 6.14 Item G, and Table 6.20 Item G. Because of the complex nature of construction projects, as discussed in Chapter 2, most conflicts with project contractors in the case study projects were reported by the government sector projects having a physical output.

Negotiation methods used in dealing with contractors from the case study projects took a more proactive approach to managing conflicts compared to how conflicts with the principal organization were handled. A one sided approach to contractor directed negotiations dominated the case study projects, where project personnel gave preference to win-lose type of negotiations over win-win type outcomes. There were some instances where the project personnel indicated opening a channel of communication with the other party i.e. contractor(s), but these instances arose either when there was a technical conflict, or at the early stages of contract negotiation. Taking a 'life world' view of the two methods of negotiation used in the projects, I conclude that both the methods are valid, according to the validity criteria of TCA, as they either thwart further conflicts or force a situation of resolution with the offending party. If these conflicts are allowed to go on the project suffers monetary losses, time delays, and loss of quality.

Negotiating with Tribes

Negotiation methods used when dealing with the tribes are detailed in Table 6.9 Items A and H, and Table 6.14 Items A, E and H. Private sector service oriented projects included in the case study had no interactions with the tribes therefore these are excluded from this discussion.

Negotiating with the tribes is a part of the reality in which the government run case study projects located in the tribal and rural areas of the region operate, while the key negotiation instrument used during these negotiations is, as explained in Chapter 6, the *jirga* (a gathering of elders). The *jirga* follows a specified code of conduct during its proceedings. Although, anyone is allowed to attend and speak at the *jirga* that is often not the case because violations of its decorum or protocol are considered an offense and results in decisions being passed in favor of the non-

offending party. As the decisions reached by the *jirga* are binding in nature on all parties involved, both the *jirga* presiders and nominated spokespersons from the conflicting parties (in our case, project personnel and tribal members), are seasoned experts in *jirga* decorum and protocol. This is one reason why interviewees on the case study projects reported never having attended a *jirga* and had difficulty identifying who actually represented the project in case a matter was referred to a *jirga*.

Keeping in view the particular protocol and decorum requirements of the *jirga* and the binding nature of its decisions, I find that on the case study projects negotiations with the tribes took the form of meetings that were either informal or formal (i.e. in the form of a *jirga*). The data analysis presented in Chapters 5 and 6 presented the case that negotiations with the tribes took place using the formal *jirga* system, however several instances were identified where project personnel engaged with the tribes in more informal terms. Therefore, I conclude that organizations responsible for the case study projects have a separate set of individuals who represents the project on formal negotiations with the tribes, while the case study project personnel themselves represent their projects during informal negotiations with the tribes, clans, or tribal individuals. In referring to the evidence provided in Chapter 6, I find that informal negotiations with the tribes are similar to negotiations with other project partners, such as contractors or suppliers. Data indicates that the use of informal negotiations when dealing with the tribes are contextually rational, due to a directed goal, because both parties prefer to strive for quick resolution of conflicts at a personal level and invoke formal negotiations via *jirgas* only when informal negotiations fail. We consider the use of a *jirga* as contextually rational because of the communicative process through which it is invoked and orchestrated.

Negotiating with Internal Staff and Outside Parties

Negotiations between the case study projects internal staff members are discussed in Table 6.9 Items C, E, I, J & Item B in the second part of the table, Table 6.14 Item F, and Table 6.20 Items C and G. Negotiation methods employed on the case study projects range from compromise and win-win agreement to harsher measures, such as confronting an offending employee or transferring them to another project.

The issue of bribery gave rise to opportunities for negotiation on some of the government run projects included in the case studies, however reports of bribery were specific to the projects' dealing with outside parties. Evidence presented in Chapter 6 indicates that a common response to requests for bribes by outside parties was to oblige the offenders, either from the onset or after some resistance (see case of Campus Construction Project and utility company), so as to keep the project work from stalling. Although none of the respondents provided any examples of bribery related to their project's internal staff, they did not deny the possibility of its occurrence. This refusal to comment further on intra-project-bribery is rational in that those involved are either peers or higher-ups in the project hierarchy and providing examples would expose their identity. Consequently, such an exposure could result in ill will between the project staff, loss of face for those identified, or sanctions against the claimant.

Negotiation tactics employed during the case projects varied depending on the position of power held by the offending party. For example, negotiations involving project higher-ups and peers were compromise oriented, while negotiations with project personnel in lower positions were of the win-lose type. The negotiation tactics used when dealing with outside parties were similar to those employed while negotiating with project contractors.

Where the case projects are affected by the prevailing law & order situation and require extra security or help in getting their material to the work site, the negotiation methods used are those favoring win-win outcomes e.g. see description of negotiations used with the political agent on the small-dams project in Chapter 6. The process through which the negotiations are enacted are making requests, written communication, and meeting with those concerned in person.

From a 'life world' perspective, negotiated actions directed at parties external to the project are rational in that any outcome other than win-win would be a cause of extra delays to the work that the project staff wishes to accomplish. Negotiation tactics employed when interacting with internal staff members who are not in a position of power are considered irrational, for rather than striving for a win-win outcome, the project personnel adopt a stance of confrontation or severing relationships. Such actions violate TCA's criteria for an actions validity, which is that both parties must be working towards a similar goal. Rationality of the negotiations

with both the internal and external staff holds in all cases where communicative negotiation mechanisms are used.

7.2.3 Conclusion to the Discussion through the Lens of Habermas

The discussion above has presented a perspective on the data presented in Chapters 5 and 6 through the lens of Habermas' TCA. Although a general discussion would have served the purpose of offering insights and drawing conclusions, by using a theory closely aligned with the present study I was able to offer certain additional insights.

Rationality, as discussed in Section 4.14, is categorized by TCA into two types the Cognitive Instrumental and the Communicative. The consequence of this dualist rationality is that certain actions that are deemed rational when viewed from one perspective are irrational when viewed from another. Thus, certain actions on the projects are deemed valid by all parties involved only if all the protagonists adhere to one rationality. The validity of actions becomes questionable when the protagonists are found to be adhering to different rationalities. Additionally, power distances on projects are consequential in how conflicts are experienced and negotiations enacted. As an example, I find that the greater the power distance between the protagonists the greater the drive to suppress conflict and not to pursue negotiated actions (i.e. withdrawal) is present from the dominated party, while the exact opposite is true for the dominator (i.e. forcing). While, in conditions of equal power I find more win-win type arrangements being made. Without the use of TCA's concept of the 'life world' I would not have been able to determine the rationality of such actions.

In the next section I offer a general discussion on the data without using the lens of TCA.

7.3 General Discussion

This section provides a general discussion based on the data analysis presented in Chapters 5 and 6 and reflects on how the literature gap identified in Chapter 2 is addressed. The discussion below stands separate from Section 7.2 and presents a self contained discussion citing pertinent references from the data set. The section is structured into four parts, such that Section 7.3.1 comprises a discussion on the

drivers of project conflict & negotiation; Section 7.3.2 presents a discussion on the negotiation tactics used in the projects; Section 7.3.3 discusses the role played by a teams cultural makeup in how it experiences conflict & negotiation; Section 7.3.4 discusses the role played by conflict & negotiation in the complexity of projects; and Section 7.3.5 concludes the section.

7.3.1 Discussion on the Drivers of Project Conflict & Negotiation

The project management body of literature is by no means mute on the subject of conflict & negotiation, as discussed in Chapter 2. Several dispute drivers were identified in Table 2.3 (most originating from the construction domain) while drivers of project conflict were discussed in Section 2.6. However, these are merely specific examples of the conflict types presented in Table 2.5. The objective of the following discussion is to identify this study's contribution to the knowledge base of project conflict literature by identifying new conflict drivers and explaining how these operate. We begin by relating conflict drivers identified during the study implementation against extant literature, following the logic that if a conflict driver is explained in the literature then the study's findings are considered as ratifying the literature. Whereas, a conflict driver that is not covered by the literature will be considered unique and consequently extending the literature.

One of the first concerns within the project conflict literature was the duality of authority figures within the matrix structure, therefore this is a logical point from where to begin our discussion as well. All the projects included in the case study, except the movie making and TV drama projects had a matrix structure. It has been argued in the literature that the duality of authority figures within the matrix gives rise to power struggles (e.g. Kirchof and Adams (1989)). Arguably, a reason why this is the case has to do with goal unclarity, which matches closely with the goal conflict classification identified in Table 2.5. Some of the examples discussed in Chapter 6 relate to this type of conflict and, as suggested by the literature, exhibit power struggles between project personnel and those in the main organization. Examples include, power struggles between the project manager on the MP and his GM, and the imposed use of the PMBOK and MS Project on the VEP. Further examples presented in Chapter 6 clarified that power of the principal organization is

manifested through a variety of coercive actions (e.g. treats of transfer, loss of benefits etc.) against non-conforming parties. However, not all conflicts between the project and its functional organization were power struggles. Conflicts arising on the DS project because of the slow release of funds by the main office, were attributed to policy differences, as were finance issues on the DM project. Elsewhere in the data, I find that some of these conflicts are caused by a lack of communication between the project and its functional organization. For example, in case of the CC project and its IT department conflicts were driven in part by a belief held by the project teams that their concerns would not be considered, and fueled by a fear of retribution from the project principal. Unfortunately, such a condition gives rise to opportunities for conflict to continue or increase in other areas of the project. Therefore, I conclude that not all conflicts in a matrix structure are driven by authority or power issues, but could also result from poorly formulated policies or inadequate communication between the parties involved.

In discussing problems on the Apollo program, Wilemon (1971) identified several conflict drivers, namely: diversity of experience, broad objectives, unclear goals, and low authority of the project manager. As these conflict drivers are specific to the working of the project teams, our discussion too is from the perspective of the team. Reflecting against classical literature on conflict, a diversity of experiences within project teams and unclear goals could result in disagreements regarding the goals or tasks, thus giving rise to either substantive conflicts or goal conflicts (described in Table 2.5). Additionally, the possibility of a conflict of interest between the individuals involved cannot be overruled. Empirical evidence from the case study projects confirms that the experience level of the project personnel does play a role in driving conflicts. For example, on the DS project the project accountant verbalized that some of the problems related to payment releases by the head-office were a result of the difference of experience between the project accountants and accountants working with the sponsoring organization. However, I did not find any empirical evidence pertaining to conflicts of interest within the projects surveyed or the case study projects to support or negate this position. Therefore, although the role of a team's experience diversity in driving conflicts on the case projects is a reality the role of conflicts of interest is unclear. The second driver of conflict identified by Wilemon (1971) is broad objectives, which could give rise to the project team members preferring different outcomes thereby giving rise to goal conflicts.

As the discussion above has already tackled the issue of goal conflicts it will not be further discussed. The last conflict driver identified by Wilemon (ibid) is low authority of the project manager, however, literature on conflict has not identified authority level as a conflict driver; the closest conflict type that encompasses such conflicts is role conflicts. However, none of the projects included in the survey presented any examples arising because of the project manager's level of authority. This may be because most of the individuals interviewed during the case study were project management team members and therefore they did not portray themselves as having a low level of authority. Coercive use of authority, which is ranked as the lowest influences by Gemmill and Thamhian (1973, 1974), was found on the DM project in dealing with project staff and on most of the government projects when dealing with nonconforming contractors.

Additional drivers of project conflict were identified by Butler (1973), of which those that have not been discussed above are: reversal of interaction patterns, and disjoint between professional objectives and project work requirements; both of which are examples of role conflict. Reversal of interaction patterns refers to conflict caused by role reversal, where member of a functional department is assigned the role of a project manager. On the projects examined I did not find any conflicts arising specifically due to role reversal despite many of the project staff having been assigned project roles i.e. in the case of functional staff members assigned to the project. Possible reasons for this include a fear of job-loss and coercive actions from the principal organization. On the other hand, an example pertaining to conflict arising because of a disjoint between the professional objectives and project work requirements was found on the VEP, where the PD who was a trained chemist felt he was not qualified for the position he held. The PD's lack of formal training in project management gave rise to conflicts between the project and principal organization pertaining to the use of standardized project methodologies and software (i.e. PMBOK and MS Project). On the other projects I found a sense of great pride and a sense of ownership for the projects within the project personnel e.g. see case of MP, CC, and DS. This is possibly because all these individuals were there by choice and were working in professions matching their education and skill sets.

A final set of project conflict drivers were identified by Thamhain and Wilemon (1975), namely: schedule, priorities, manpower resources, technical conflicts, administrative procedures, personality, and cost objectives; these are discussed next.

Schedule related conflicts were expected and found across all the case projects, ranging from scheduling delays due to problems internal to the project (e.g. delays introduced into the project because of late payment releases) or because of the project's interactions with external parties (e.g. during the process of negotiating with tribal members). However, some unexpected scheduling delays arose because of the existing law & order situation in the region that prevented access or delayed transport of raw material to project sites. Additionally, the lack of law & order restricted the movement of project personnel and contractors within the region, which delays project monitoring and evaluation activities and consequently slowed the initiation of further work. The second conflict identified by Thamhian and Wilemon (1975) is project priorities. This type of conflict refers to task or goal directed conflicts arising from the matrix structure of project organization, such conflicts have already been discussed above and are therefore not reiterated here. The third most frequent conflict pertains to manpower resource availability, Thamhain and Wilemon (ibid) attribute its existence to the struggle for resources between the project and functional organization in the matrix structure. Empirical evidence from the case projects confirms the presence of similar conflicts, however, not because of the matrix structure but rather because of the law & order situation in the region. Where the manpower employed is unable to reach the project sites or because of the existing lack of qualified or certified journeymen [*sic*] in the region, many positions on the projects go unfilled. What limited manpower is available comes at added cost to the project. Further more, restrictions on the manpower are present because of the tribal nature of some of the projects studied. This limits the employment of project contractors and workers to members of tribes, thus available manpower in urban areas are deemed unqualified to work in the tribal areas because of their domicile. Evidence indicates that the consequences of such shortages are felt in both the project budget and schedule. The fourth type of conflict on projects according to Thamhian and Wilemon (1975) is technical conflict, which as expected, pervaded the case projects. Evidence for its existence ranged from conflicts within the project team, to conflicts between the team and its external partners. Intra-project-team conflicts for example were reported on the MP whose PM conveyed that poor hiring practices followed by his principal organization meant that inappropriately qualified individuals were sometimes placed on the project, resulting in various project plans being drafted by persons who had no or little technical knowledge of the project

work. Evidence from the case projects indicates that technical conflicts with external contractors pertained mostly to issues of poor quality (in workmanship or raw material), or revolved around concerns of escalation in material costs. For example, see interactions between the CC project and its contractor, or VEP and its training providers, or LH movie and its costume designer. The fifth most frequent conflict on projects stems from administrative procedures. Because of the manner in which business is conducted in the region, it was expected that administrative procedures would feature prominently in the case projects. Although, data from our case projects indicates the presence of conflicts over administrative procedures the cognitive maps presented in Chapter 6 reveal that these conflicts are more a result of the underlying policies. For example, see the travel reimbursement issue on the DS project, or the issue of using different contracting documents to what the government mandates on the MP. The last two types of conflicts on projects identified by Thamhian and Wilemon (1975) are personality and cost. We found no evidence of personality conflicts on the case projects, which is perhaps because professionalism of those interviewed prevented them from admitting that the existence of such conflicts is even a possibility. Cost related conflicts on the other hand were more prevalent and ranked much higher on the case projects than Thamhian and Wilemon (1975) found. Examples of cost related conflicts found on the case projects included for example, conflicts over cost escalation, where contractors were claiming escalations costs over goods not covered under the escalation clauses, or conflicts over easement rights when dealing with the tribes etc. As such claims concern re-compensation for work or material these fit more closely with the definition of a dispute (see Section 2.3.2) i.e. these are short-term disputes and therefore necessitate settlement or negotiation.

Additional drivers of conflicts identified by the survey undertaken as a part of this study that are not identified by the literature are: land, political, utility, and current law and order situation; these have been explained in Section 5.6.1. Land related conflicts have been discussed at length in Chapter 6 and feature dominantly in physical works type projects that require access to land resources owned by different tribes. Empirical evidence pertaining to land as a source of conflict suggests that conflicts arise because the tribes attempt to increase potential revenues or benefits resulting from the use of their land, and the government attempting to reduce the costs it incurs for gaining access to tribal owned land. Precisely how actions

of the tribes and project representatives enact land related conflicts has been discussed in relation to the three categories of projects included in the case study in Chapter 6. The second driver of conflict not discussed by the literature is political conflicts, which as explained in Section 5.6.1, is a reference term for conflicts resulting from the exercise of political influence or malpractice (such as political pressure and bribery). Evidence supporting the existence of this conflict driver and how it is enacted within the case projects has been presented in Chapter 6. The third unique conflict identified in Chapter 5 (termed utility conflict) refers to conflicts occurring on the projects because of its dependency on utility providers. While, conflicts with utilities providers did not feature on the case study projects, I found that there were conflicts with other government departments. As utility providers in the region are government owned and operated, it would not be inappropriate to term conflicts of this type as inter-departmental conflicts. How such conflicts are enacted and their consequences on the project workflows has been discussed at length through the case projects in Chapter 6. The final unique conflict identified is termed ‘current’ and refers to conflicts resulting from the present law & order situation in the region. The presently ongoing war-on-terror in the region has affected projects and given birth to certain situations unique to the region that contribute to driving conflicts on the projects, such as: limiting production of raw material, increased transport costs, increased raw material costs, restricted access to project sites, restricted the movement of labor and project personnel (contractors and project management teams), increased pilferage from and destruction of project sites, and placing increasing demands for ensuring the safety and security of project personnel. For specific examples of how these driver of conflict are enacted on the case projects see Chapter 6. Additionally, the conflicts discussed above span the duration of the project and some, such as those stemming from policy issues, may possibly extend beyond the life of a single project and emerge in succeeding projects. Thus, our findings agree with Burton’s (1984) conception of conflicts as long-term phenomenon (see Section 2.3.2).

7.3.2 Discussion on the Negotiation Tactics Used

Next I discuss the negotiation tactics used on the case projects and identify any unique negotiation tactics used that are not covered in the literature (for the various negotiation techniques identified in the literature, see Section 2.3.4).

Our empirical work supports the categories suggested by the 5-style (i.e. forcing, withdrawing, smoothing, compromising, and problem solving) model of Blake and Mouton (1964), however, this was expected as the terminology used by the model is such that it is able to encapsulate all negotiations occurring on the case projects. Examples, pertaining to each of the styles have already been presented in Chapter 6 and are therefore not reproduced here. Thus, the contribution of this study to the negotiation body of knowledge is that it identifies what negotiation techniques are used on the projects, when they are used, and why they are used; and by unraveling specific examples that demonstrate the uniqueness of certain techniques or practices specific to Pakistani projects.

A regionally used negotiation method is that of the *jirga*, which put simply is a gathering of elders. The specific rules of how it is constituted and operates were explained during an interview with a tribal elder (see, Chapter 6). Several reasons contribute to the uniqueness of a *jirga*, namely: it could be constituted at the request of either party to a conflict, all those in attendance are considered socially equal and have equal voice, its decorum mandates mutual respect, its preferred outcome is win-win agreements, once constituted it does not disband until a decision is reached, and its decisions are binding on all parties. These characteristics and its participative nature renders it a favorable Alternative Dispute Resolution (ADR) tool. Further more, *jirgay* (pl.) are considered more expedient, economic, and fair compared to the existing legal system by the locals. Referring back to the discussion in Section 2.3.2 it should be noted that a dispute that has been referred to mediation or arbitration is considered to be a failure of social interaction. Thus, I conclude that the use of a 'jirga' too constitutes a failure of previous attempts to resolve a dispute. It should be noted that several examples provided in Chapter 6 note the project personnel engaging in informal negotiations with the tribe members, it is only when these negotiation fail that a jirga is invoked. As the jirga decisions are binding on the parties involved, it may be considered a conclusive remedy to a

dispute. Additionally, a *jirga* is not on-going i.e. it must terminate, which agrees with the short-term characteristics of a dispute discussed in Section 2.3.2.

Our review of literature did not reveal any articles discussing *jirgay* in the context of projects or organizations. This was expected because its use is limited to a very narrowly defined geographic region that is mostly rural and greatly underdeveloped. Although, project personnel interviewed cited the use of a *jirga* as a negotiation tool their inability to identify those project personnel that participated in one was disconcerting. However, further inquiry revealed that there were designated consultants for the purpose. Unfortunately, I was unable to identify the direct link between the project personnel and the consultant i.e. the question, how does the consultant know on what terms to negotiate with a tribe? was not convincingly answered. Similarly, other respondents argued that the political agent (PA) of the tribal locality acted as intermediaries between the tribes and projects; and being a government employee he [*sic*] is expected to look after the project's interests. However, I was not able to unravel precisely how project personnel were communicating their terms of negotiation through the PA, for none of the project personnel had interacted directly with the PA. This suggests that a communication gap exists between the project, consultants, and PA; and that the principal organization itself is taking the initiative to communicate with these outside parties without the request or consent of the project manager. And that the project manager on becoming aware that communications with outsiders have taken place on behalf of the project does not question the outcome, rather accepting it as if it was intended. Similarly, from the perspective of the tribes, I found that *jirgay* are indeed taking place with the tribes and that the PA plays a much bigger role in these compared to the consultant. This suggests that communication of some sort does exist between the project and PA; however, through whom and how this communication takes place is unclear. However, I did find evidence of communication on trivial administrative activities between the project personnel and PA for matters such as seeking security through the levies; or seeking permission to enter the tribal land etc. Clearly, this seems amiss until one takes into account the organizational grapevine and its role in conveying information across the project and its principal organization. Evidence of the informal communications taking place during the project, between the project and organizational members is captured in the anecdotes presented from the meeting observations presented in Chapter 6. Further support for the role played by

the informal communication can be found through the various interview excerpts that detailed the informal communications taking place between tribal members and project personnel. Failure of informal negotiations are demarcated by formal negotiations being initiated; with the possible worst case situation of complete abandonment of the negotiation process. Consequent affects of which include either a new site being chosen for the project or the project being discarded altogether.

Additionally, although the literature presented in Chapter 2 is mute on the topic of bribe giving and taking during projects, it is covered well by the concept of Hirshleifer (1987) 'appropriative' activities (discussed in Section 2.3.2). Sufficient evidence is presented in Chapter 6 indicating that bribery is used as an instrument of negotiation during the case projects. However, because of the inherently sensitive nature of the topic I was presented with very cautious examples by the case project personnel. Most of the examples presented related to parties outside to the project and the principal organization, but data from some project contractors presented in Chapter 5 placed blame in the other direction. Thus, use of bribery on the case projects was not denied by those interviewed, rather any disagreements related to who was on the giving or receiving end. The reason bribery is not mentioned as a negotiation tool in the literature is because it is illegal and any invocation of the term seems to suggest that it is used to propel or accept wrongdoings on projects. However, evidence from the case project suggests that at times projects engage in bribe giving in order to accomplish tasks that are perfectly legal e.g. see CC project and case of electric meter installation.

There were some patterns to the style of negotiation employed on the case project, which varied depending on the position of power held by the opposing party. For example, it was observed that negotiation styles adopted when negotiating with the principal organization or other higher-ups in the project hierarchy, the project management team opted for a softer approach and favored compromise and withdrawal. Whereas, when negotiating with subordinates or outside vendors and contractors, the project management team members adopted more rigid and uncompromising negotiation styles, such as forcing etc. Negotiations with peers generally favored more compromise and problem solving. This variability in use of the negotiation styles makes sense in that the project management team members are making conscious style decisions based on who holds a position of power. Where the project team is in a position of low power then it has no option but to compro-

mise and be flexible during negotiations. Where the project team is in a position of high power, then it decides not to delay the project and pushes for more aggressive negotiation styles. Where the project team and conflicting party are both equal, then the preferred style is compromise and problem solving.

7.3.3 Discussion on the Role of a Team's Cultural Makeup

This section focuses on the role of a project team's cultural makeup in how it experiences conflicts and negotiates. As explained in Chapter 6, only two of the case study projects had a multicultural presence. One project belonged to the category of government sector projects having a physical output, discussed in section 6.3.2, while the other belonged to the category of private sector projects having a non-physical output, discussed in section 6.7.2. The government sector case projects having a non-physical output did not have a heterogenous cultural makeup, see Section 6.5.2. Therefore, the discussion contained in this section draws from the empirical evidence presented in sections 6.3.2 and 6.7.2.

Limited data was available in relation to RQ3 within the case projects pertaining to the role of culture in conflict & negotiation. Several reasons contribute to this lack of information: First, the definition of a heterogenous culture as suggested by Trompenaars and Hampden-Turner (1997) is limiting in that it does not take into account the cultural variabilities within national cultures. This necessitated taking the whole of the country as a single national culture as is the case with Hofstede (1991) and thus limiting the study's focus to cross-cultural interactions between cultures originating from different countries only, i.e. ignoring the cultural issues related to interactions between members of the various local cultures within the projects. Second, the prevailing law & order situation in the region of the case study projects has placed extraneous restrictions on interactions between representatives of the different cultures comprising these projects, where only select individuals from both the cultures are allowed to interact formally. Therefore, each cultural group operates as a separate and isolated group within the projects studied. Furthermore, those interacting with members of the foreign cultures on behalf of the projects were not members of the case study projects' management teams but were rather permanent employees of a government owned and operated consulting and contracting firm. As the respondents from our case study projects had not interacted with members of

the opposing cultures, and I was not able to negotiate access to interview members of the government consulting and contracting firm, I was unable to gather data pertaining to the role of culture in project conflict & negotiation. Additionally, negotiating direct access to members of the foreign culture groups on the dam extension project was denied despite our best efforts, thus restricting access to the data source further.

The sole data source that allowed access and was in a position to present evidence in response to RQ 3 was the small docudrama project discussed in section 6.7.2. However, during the interview no conflicts were reported on this project. This is because of several reasons: The industry to which this project belongs is suffering from severe recession and closures due to talibanization in the region. Therefore, those employed on the docudrama project were thankful for being employed and did not wish to risk losing their wages by engaging in conflicts; rather the approach adopted by the project personnel was that of following orders without question. Secondly, the project manager (producer) of the movie is a world renowned authority in the field and was held in a position of admiration. Therefore, working on a project alongside him was considered a privilege because of which the team members suppressed any conflicts. Lastly, there is a local cultural code governing all interactions (called ‘paktoonwali’) a key tenet of which is ‘milmastiya’ or hospitality, which places the needs and wants of the ‘milma’ or guest (i.e. foreign member(s) of the project) above those of the host and probably further suppressed any conflicts between the two parties. The use of ‘milmastiya’ was apparent in the project as several times during the observation session the producer was referred to as a ‘milma’.

7.3.4 Discussion on the Role of Conflict & Negotiation in the Complexity of Projects

This section builds on the analysis presented in Section 6.8 and presents a discussion on the role of conflict & negotiation in project complexity.

An exploration of how conflicts within the case projects give rise to negotiated actions has already been presented in Chapter 6. Additionally, evidence was presented pertaining to post-settlement negotiations (e.g. DS and its interaction with the tribes), where members of the tribes were reportedly engaging in negotiations even after settlements between them and the project personnel had been reached.

Therefore, any assumptions regarding the discreteness of negotiations are not always true, rather at times negotiations are ongoing, and cease only when interests of the parties involved are satisfied, or when either party decides that negotiating further will not benefit their relationship or result in further gains (monetary or otherwise). The possibility of negotiations continuing beyond a point of settlement contributes to goal uncertainty, which as defined in Chapter 2 is a contributor to project complexity.

Aside from conflicts contributing to project complexity by necessitating negotiations as discussed above, evidence from the case projects indicates that it is not necessary for every conflict to be followed by a negotiation activity, rather some conflicts were reported giving rise to further conflicts (e.g. interactions between CC and its primary contractor). Thus, there is a degree of uncertainty involved in the conflict & negotiation process in terms of whether a conflict will be followed by negotiations or further conflicts. Further more, the unpredictability of when negotiated settlements are to be considered final, as discussed in the paragraph above, contributes to project complexity in two ways: increasing goal uncertainty, for the parties' competing interest means that a mutually agreed goal does not exist, rather it is defined and refined through a process of interacting and interrelating; and increasing method uncertainty, for there are no prescribed negotiation methods that the parties must use in a given situation. Although some respondents from the case projects indicated that there were set rules and procedures for negotiations with contractors, however, evidence (e.g. see case of CC, DS, and MP projects and their contractors in Chapter 6) indicates that this was not necessarily true, and that negotiations were occurring at various points and on various issues within and beyond the rules and regulations established by government bodies. This is because of several reasons such as, a belief in the local culture that there is always a possibility to negotiate further; increasing inflation in the region driving up prices of raw material; and the law & order situation in the region affecting movement of goods and people, availability of cheap raw material, and further increasing costs of labor and material beyond the rates of inflation. The former leads to negotiations based on the assumption that further gains are possible, the latter leads to an increase in escalation related claims. Interestingly, although these escalation claims, as explained by CC-1 and GC-1, are not covered by the contracting rules followed by the government projects, contractors still make claims with the hope of gaining

a sympathetic response. Claims by the contractors are followed by a chain of negotiation efforts while a contractors seeks to exploit all available avenues to achieve their purpose, thereby adding to the number of negotiation activities taking place. Consequently, there are numerous negotiation activities that engage project personnel, while it is clear that the outcomes for which these negotiations are instigated are not achievable.

On the private sector projects, contracting and the contractor play a much smaller role in project complexity, because of several reasons. There is no formal contractor selection process, rather work is awarded to contractors recommended through social relationships; instead of formal contracting procedures, work is contracted out using verbally agreed fixed-price contracts; a contract can be terminated at anytime by either party, a consequence of which from the project's perspective entails paying (in-part or in-full) for the labor charges of the work performed up to termination; and the simple nature of work contracted out and the abundance of available contractors in the market means that contracts can be abandoned without hesitation. Evidence of contract abandonment is found on both the LD and LH movie projects, where both instances went without incidence. Because of the type of contracts used and the short duration of the contracted activities on the private sector projects, there were no possibilities for escalation claims to arise and none were reported by the three private sector projects included in the case study. This may also be because of the LD and LH projects small size and relatively informal project setting. From another perspective this is because in a way escalation is built into the contracting and purchasing processes followed, where material is purchased on a when-needed basis with the consent of the project manager, and payments made as per actual cost incurred. Arguably, contracting on the private sector projects was simpler than contracting on government projects, consequently giving rise to fewer post-contract negotiations and conflicts, and therefore playing a marginal role in project complexity. Government project contracting based conflict & negotiation, on the other hand, plays a more significant role in project complexity because of the complex nature of contracting followed the scale of work (financial and physical), the duration of work under contract, and environmental uncertainty in the region.

Interactions between the case projects and the local tribes also involved numerous conflicts requiring negotiations. Several examples were presented in Chapter 6, e.g. see DS and MP project and their interactions with tribes, outlining the intricacy of

the conflicts between the tribes and case projects. Some of these conflicts were driven by the government projects' preference for a particular compensation model, whereas the tribe, being aware of their rights, favored a different and more lucrative model. Therefore, arguably at times the underlying policy itself gives rise to project conflicts by supporting the existence of two different goals. This goal mismatch between the entities is resolved via a process of negotiations. However, at times the tribes engage in unethical behavior (e.g. in the case of constructing fake graves and fields on the DS project) to further increase their gains. Such behavior is unpredictable, may take multiple forms, and contributes to the environmental uncertainty of the projects, which as conceptualized in Chapter 2, is a contributor to project complexity.

Existence of unethical behavior on the case projects contributes by increasing conflicts on the projects and adds to the uncertainty of the negotiation process. Examples of cheating & bribery were not forthcoming from the project personnel, for reasons discussed in Section 7.3.1, however, its existence was not denied. Interestingly, the practice of bribery as discussed in Section 7.3.1 is not necessarily for illicit activities, rather it may be demanded and paid for legal and routine activities (e.g. see CC project and its interaction with the utility provider). Further more, those demanding bribes were found to be members of other government departments who are suppose to be working in the interest of the government and thereby the projects (e.g. CC project and Bureau of Statistics). Therefore, project work is delayed while illicit demands for bribery are resolved. Similarly, on the private sector projects, indirect requests for bribes were reported by government officials (e.g. LD and censor board) where again the project work was stalled while illicit calls for bribes by those officiating were pacified. Thus, unethical behavior contributes to increasing project uncertainty, where those representing the project or government themselves consume a project's finances or introduce unplanned delays. Regionally, the practice of bribery is a common occurrence spanning interactions with government departments, even though the practice is shunned both religiously and culturally. However, those engaging in the practice use terms that desensitize the act for both themselves and the payee. Terms used while soliciting a bribe include: 'commission', 'chai-pani' (lt. tea and water), 'baksheesh', 'methai' (confectionary), and 'imdad' (lt. facilitation). Interestingly, the terms 'rishwat' (lt. bribe) and 'rishwati' (lt. bribe taker) are rarely used during such transactions, unless the intent is to offend and insult the bribe taker. Refusals to make a bribe payment is met with severe resistance,

resulting in an onslaught of delay tactics aimed at frustrating the resistance e.g. see case of CC and utility provider.

The discussion presented above should not be misconstrued as proposing a linear relationship between project conflict & negotiation and complexity, rather, the relationship in question is far more intricate and composed of many reciprocal interdependencies as demonstrated in Section 6.8. The actual role of conflict & negotiation in project complexity is not in the discreteness of events, rather it lies in their sequentiality and reciprocity. Furthermore, it is difficult to accurately identify a single cause of increasing project complexity, particularly when some conflict & negotiation events on the case projects were shown giving rise to one or more additional conflicts or negotiations of either the same type or different. Thus, the concepts of sequentiality and feedback (see, Williams (2002)) are confirmed within the case study data. Additionally, evidence presented suggests that at times conflict & negotiation results in rework, which agrees with Cooper's (1997) concept of rework loops. However, our data also suggests that many conflicts & negotiations on a project are a result of contractors attempts to mask poor quality work and avoid rework (e.g. CC project and contractor). Also, a common theme found across all the case projects was that conflict & negotiation on the projects gave rise to stalled work and delays while concerned parties attempted to reach resolution, which confers with Eden et al. (2000) concept of disruption and delays. Conversely, evidence, e.g. CC construction project and contractor; or DS and contractors; or LH and costume designer, suggests that at times conflicts arise or negotiations are held because there are disruptions or delays on the project.

7.3.5 Conclusion to the General Discussion

This section has presented an exhaustive discussion on the data, the purpose of which was not only to explore the data in detail and draw conclusions but also to exhibit a link between this study's findings, the extant literature, and the literature gap. Building on the findings presented earlier, in Chapters 5 and 6, our discussion focused on providing greater meaning to the study's findings and explored the catalytic nature and consequentiality of the conflict & negotiation driven actions within projects. The recursive nature of the conflict & negotiation drivers and actions was discussed as contributing significantly to the case projects' complexity.

Additionally, the discussion maintained a focus on the inputs and outputs of project conflict & negotiations. Numerous conclusions were presented throughout the section, these combined together enable us to conceptualize further the possible areas of work through which this study could be extended, discussed in Section 7.4.

The general discussion presented here, as explained above is independent from the TCA discussion presented in Section 7.2, however, this should in no way imply that one is better than the other. This study benefited from the use of a general discussion while examining the data, for it allowed us to examine the data from several perspectives i.e. super-ordinates, peers, and subordinates. Bringing together the rich and diverse narratives collected during our study implementation allowed us to understand certain phenomena better because of the process of the critical realist tradition of retrodution.

7.4 Future Work

This thesis has demonstrated the role played by conflict & negotiation in increasing the complexity of projects and offered many new insights. However, given the study's cross-sectional nature, limited resources, and regional focus, many opportunities for extending this work exist. This section presents some of these directions and is structured such that Section 7.4.1 discusses possible further contribution at the theory level, while Section 7.4.2 approaches the discussion from the perspective of a practitioner.

7.4.1 Theoretical Work

This section discusses possible future work resulting from the implementation of our work from the perspective of a theorist. From a theoretical perspective there are two levels of future work possible conflict & negotiation, and project complexity. These are discussed next.

Retesting existing studies: A significant body of project management knowledge is based on the work of Thamhain, Wilemon, and Gemmill in the 1970s and most of the literature examined by this study seems to complacently except their findings. It would serve the community well to retest these studies in to determine if the proposals put forward by these studies are still valid today. Furthermore, as

these studies have with the passage of time been attributed a sense of universality, it would be beneficial to examine if that truly is the case.

Conflict Assessment: Conflict assessment measures need to be extended and assessment tools need to be developed. Thomas & Kilmann's (1974) conflict style 'inventory' still dominates much of conflict literature and allows for the classification of an individual's preferred 'style' in situations of conflict. However, their inventory offers little in assessing an existing situation of conflict. Therefore, further work is needed to develop an instrument that could be used to classify a situation of conflict by type. Such an instrument used along with a conflict style inventory would prove to be of great use as it would not only tell us the nature of the conflict being experienced, but also gauge the appropriateness of the 'style' adopted for its management. Further work could be conducted into what happens within projects in instances where inappropriate mix of conflict type and applied conflict management style exists on a project. Such studies could be conducted incrementally by focusing on the various phases of the project lifecycle. Additionally, following the line of reasoning established by Williams (2003b) such a study should also examine 'what went right' i.e. what happened in instances where an appropriate conflict management strategy was used in response to a conflict situation along with examining what went wrong.

Negotiation Styles: Very abstract level studies exist that have mapped the various negotiation styles that exist. However, further work is needed to explore how the various protagonists choose between negotiation styles based on their intent for participating in a negotiation activity. Such work could unravel whether there is a mismatch between negotiation style and intended purpose for which negotiations are being held. Additionally, by using a qualitative methodology, the researchers should be able to capture lived examples of how the various protagonists make choices between negotiation styles and negotiation tactics to manipulate reality to their benefit.

Negotiation Tactics: Building on the proposed area of study discussed in the previous paragraph, further study is needed into the specific negotiation tactics used on projects. By tactics I mean the specific techniques (not negotiation styles) through which negotiations are enacted. Additionally, patterns underlying the choice of tac-

tics may be usefully explored by sector. Furthermore, an examination of alternative dispute resolution tools and techniques is needed that could bring to the fore any particular methods that could be of benefit to the practitioners.

Relationship between Conflict & Negotiation: A lot of work has been conducted on conflict and negotiation separately but there is little that explores the relationship between the two in detail. Specifically, within the context of project management there is a need to unearth patterns of behavior that could be used to improve conflict management in projects. Furthermore, such a study if implemented by sector or industry type will add to our knowledge base and clarify if different negotiation techniques are needed based on project types.

Role of Law & Order and Cheating & Bribery: This study has identified several drivers of project conflict & negotiation that need to be studied in greater detail, for they need to be understood in more detail to adequately manage their effects. Existence of a Law & Order situation in the broader environment which projects are situated was identified as a driver of several conflicts in the case projects. These conflicts consequently gave rise to several other conflicts and associated negotiation efforts on the project. Further research is needed to explore the role of extraneous environmental factors in the complexity of projects and on the conflict & negotiations taking place within projects.

Illicit behavior within projects, such as cheating & bribery, played a significant role in increasing project conflicts and consequently gave rise to additional negotiation activities. These too need to be examined in detail so that mechanisms can be derived to curb their impact within projects.

Jirga as an Alternative Dispute Resolution Mechanism: The *jirga* was found to be a frequently used dispute resolution mechanism in conflict & negotiation efforts involving regional tribes. Further work is needed to explore its role in projects in more detail. Additionally, mechanisms similar to the *jirga* such as the *panchayaat* (lit. gathering of five persons) also need to be explored in the context of project conflict & negotiation.

Complexity and Conflict & Negotiation: This study provided a detailed thesis on the role played by conflict & negotiation in the complexity of projects, how-

ever, further work is needed. The current study did not cover private sector physical works type projects, future research may focus on this area using the instruments and techniques used by the current study. This new work would contribute by enriching the results discussed by providing an alternative set of data to reflect the study's findings. Two sources that would serve as a rich source of data include domestic construction projects (usually involving the owner, architect, and one key contractor), and industrial construction efforts (involving several partners, a medium size architectural firm, and one key contractor). Other possible ways through which the existing work may be extended include broadening the geographic scope of the study in order to determine if the findings presented by this work apply nationally in Pakistan and beyond. Furthermore, quantitative data collection instruments could be derived based on the findings presented to inquire whether the finding could be generalized. Further work could also include studies that follow a project through the various phases of the lifecycle. Such studies would reveal how the conflicts and the applied negotiation techniques experienced across each lifecycle phase vary.

7.4.2 Practical Work

This section presents a discussion on the possible future work resulting from our study from a practitioner's perspective.

Updating the BoKs: This study has demonstrated that conflict & negotiation play an intricate role in project complexity. Although, most of the BoKs include topical discussions on project conflict & negotiation, they need updating to adequately reflect the topic's importance and to offer greater details to the practitioners. Additionally, sections of the BoKs detailing the commonly occurring conflicts on projects need to be updated in the light of new research (as proposed in the section above). In addition, the relationship between project complexity and conflict & negotiation needs to be introduced in the BoKs as well. Unfortunately, this would require that the BoKs first include the concept of complex projects, which at present they ignore.

Training and Development: As a consequence of the limited discussion on conflict & negotiation in the BoKs, project management training too skim over the topic. Thus, project management training programs need to be updated to reflect the topic's importance. Additionally, training programs specific to the management

of conflict & negotiations in projects need to be introduced based on any patterns identified resulting from the future work proposed in the previous section. Additionally, training need to be developed so that a clear relationship between conflict & negotiation and project complexity is conveyed.

7.5 Concluding Remarks

The present study began with a detailed treatise on the developments taking place within the literature pertaining to project management, conflict & negotiation, and complexity. Based on the directions set by the literature cited in the ‘literature gap’ section of Chapter 2, the current study continued exploring the topic further. The numerous interview excerpts cited, patterns identified, and causal links unraveled during this study come together to address the literature gap and add to our understanding. However, unlike the concern of generalization found in much of the literature, this work has focused on exploration and explanation building of conflict & negotiation within the unique and challenging project environments of the case study projects.

The present study used a mixed methodological approach consisting of a survey, interviews, participant observations, and archival data examination to make sense of the role played by conflict & negotiation within project complexity. In that regard, the study investigated how conflicts emerged, were negotiated, and reemerged; and how while being enacted on a project they created enduring influence through their outcomes. The rationale driving this approach follows from contemporary literature that rejects the technicist stance in favor of the communicative and generative.

By adopting a critical realist perspective towards conflict & negotiations, the current study problematized its underlying components and showed how conflicts & negotiations are driven by a different set of drivers to the ones cited in the literature. In doing so, this study challenged several accepted project concepts. For example, it demonstrated that the drivers of project conflict & negotiation vary by project type and regional influence. It has emerged how illicit activities such as cheating, bribery, and pilferage gives rise to conflict situations that require management. Also, it has emerged how the environmental conditions such as the law & order situation, affects the projects and drives further conflict & negotiation. The present study, also emphasizes the contextual relevance of several negotiation techniques such as a ‘jirga’,

which was demonstrated as a fundamental conflict management and negotiation forum while dealing with the tribes.

Overall, conflict & negotiation have been explored as multi-faceted constructs that pervade the project lifecycle and have the propensity to become enduring as they give rise to feedback loops and recursions that add to project complexity. This connection between conflict & negotiation and complexity suggests that opportunities exist for developing more robust models and measures of project complexity; and for the identification of patterned behavior to project conflict & negotiation by sectors and regions that has the potential for effective intervention.

7.6 Personal Reflections

This section offers a personal reflection on the research journey undertaken as a result this study and discusses how my experiences through the research process have made me a better researcher.

This study began as a result of my personal interest in the topics of conflict & negotiation and project complexity. My Ph.D. is unique to me because of the uniqueness of the experiences that I had and the limitations that I faced while working on it. In extending our discussion experiences that relate directly to this study are elaborated upon. In addition, some personal experiences are shared to provide background to some of the problems, issues, and difficulties I faced during this research project.

Making Research Notes

Because of family demands and financial constraints I enrolled in the Ph.D. program as a split-site student, which enabled me to maintain full-time employment, take care of my family, and complete my studies. Unfortunately, being a split-site student brought with it a unique set of difficulties and hardships that perhaps those pursuing an on-campus route towards a Ph.D. would not encounter. An immediate consequence of being a split-site student that became apparent very quickly was the I would need to quickly adapt to working in a paperless manner. This required breaking many old habits. Initial attempts included printing research papers and then reading and making notes about them, followed by saving the data into End-Note. Unfortunately, this technique did not work for two reasons, it was very tiring

and some of the scribbles made on the papers during this process made it very difficult to throw out the papers. After several trials and errors a system that fit my needs and working style was developed and was followed consistently during the rest of the study period. This included reading a research paper in an electronic format, making annotations within the document, and saving these along with the papers metadata downloaded directly from the publishers website into EndNote. Research notes consisted of making summaries of the papers read, identifying the main argument presented in the study, and identifying the relevance of the paper to this study. Additionally, research diaries used during the study for making many handwritten notes etc. were scanned and saved into EndNote for easy access. Following a paperless working environment was advantageous in that all the data I had, could easily be carried around on a single encrypted memory stick and I could efficiently find any pertinent information in my database with a few clicks. Following a practice of exploring, analyzing, and archiving the various data that I was gathering and generating allowed me to maintain and build a solid knowledge base for my study.

Data Backup

Another important concern at the onset was the necessity of establishing a data backup procedure. Daily backups of the writings completed during a day were made by emailing a version of the files to a personal email address. Weekly backups of the data were taken on an external hard-drive, along with online backups scheduled on Google's g-drive and Microsoft's Sky-drive. Monthly backups of the data were made to the University of Southampton's secured data servers. As an added precaution data was backup only after applying a 256 bit encryption to the data, which prevented data theft. This strategy paid off later during the research process where one laptop experienced technical difficulties and another was damaged during the data collection process and many hours of rework were saved by simply retrieving the data from backup.

Finding Relevant Literature

In conducting the literature survey a search strategy was needed, although this has been detailed in Chapter 2 I will expand on some issues that were missed.

Initially, I began by adopting a forward and backward chaining strategy for the review of literature. This included formulating a partial list of key academic journals that was to be examined in close detail, followed by a literature survey where articles from each journal were collected. These articles were examined for relevance by first examining their titles and reading over their abstracts. Papers that were considered relevant to the study were read in entirety and research notes were made. This was followed by an examination of the references cited at the back of the paper in order to identify previous work of relevance to this study. Additionally, articles citing an existing paper were sought and examined. Although, this process enabled me to capture a sufficient body of knowledge related to the study's topic, I felt that more rigor was needed so that nothing of importance was overlooked. For this purpose various databases were searched directly using keyword based searches to find additional articles. Relationships between these articles and the articles they referenced were explored through backward searching, while relationship between an article and those citing the article were explored via forward searching. Additional measures taken to ensure depth to the literature survey included relaxing the search terms, using wildcard characters in searches, and through the use of different logical operators. Other ways through which rigor was achieved was through identifying important authors and looking up all the papers they had authored by visiting their personal websites. As my reading increased some articles were found later that had previously been missed, this is attributed to the less-well-known nature of the journals where they appeared or the proprietary indexing used by the journals. Once an article of relevance was found in such a journal, all issues of the journal were skimmed to find other relevant articles as well. Following the logic outline above, a backward and forward chaining mechanism was employed on the new found articles to seek out other relevant literature. Through a repeated application of this process I were able to find around 78 articles that our standard search criteria were not finding.

Constructing Ideas

Being a visual learner I made extensive use of my research diary for making mind maps of the different topics of concern. These mind maps allowed me to visualize the interconnections and relationships between ideas and facilitated in identifying

concepts where I needed more work. As my exploration of a topic continued the associated mind maps expanded. Areas within the mind maps that needed more study were examined in detail. Ideas, specifically, on how to be innovative in examining a topic emerged through a process of analysis of the facts founds and self deliberation. Examples, where this approach helped me tremendously was the concept of project complexity. For example, see the discussion differentiating between a simple, complicated, complex, and chaotic projects, and the discussion differentiating between a dispute and conflict. Later during the study as my mastery of developing mind maps improved, I acquired a license for a commercially available mind mapping software called 'mind jet', this software was then used as a replacement to drawing mind maps by hand.

Structuring the Writing Through Storyboards

Storyboarding was used in order to bring structure to the thesis and to maintain a logical flow to the writing contained in each chapter. This involved developing an outline for each chapter prior to the actual writing of the chapter. Each outline contained the various headings and subheadings to be used in the chapter, structured according to the logical flow of arguments that I wanted to present. Name of authors whose work was important to each section were written against the sections. Finally, an approximate word budget for each chapter and individual sections within it was decided. Following this technique allowed me to maintain a logical flow within the chapters and also to have control over the numbers of words used in each chapter. At times there was a need to revise the storyboard as additional ideas or a need for greater explanation arose during the writing process. However, this did not disturb the overall pre-decided structure of the chapter. Having a storyboard helped in directing the writing and ensuring that unrelated arguments and ideas were not introduced in the writing. Additionally, assigning a word limitation to each section fostered tighter writing. Each storyboard was discussed with my thesis supervisor at length prior to the start of writing the actual sections.

Self-Motivation

At the start of the Ph.D. program I quickly realized that keeping my self motivated was going to be a concern. There were ample invigorating moments where I was able

to come up with new ideas and my work was going well. While, at the same time there were times when everything I did seemed to go wrong or I felt stuck in a rut. It was in these latter times where I really had to motivate myself to continue. There was not a single technique that I made use of, rather I had to rely on various different ways to keep myself going. For one, I made it a habit to establish short-term, mid-term, and long-term goals for each activity that I performed. Achieving my short-term goals allowed me to have a sense of accomplishment and motivated me to keep going further. For example, setting a goal of writing between 700 to 1,000 words per day. My mid-term goals revolved around the accomplishment of a few short-term goals, such as completing half of a chapter and then proof reading it. Long-term goals were completing the writing of an entire chapter, proof reading it, sending it over to my thesis supervisor for review, and making corrections. Another motivation technique that I used consisted of forcing myself to sit and work on a section or subsection. Normally, this consisted of not closing down the computer until the area of concern was completed. For example, collecting papers on a particular topic, or entering data into EndNote, or making a storyboard for a chapter, or even writing a section or subsection etc.

Despite being conscious of my levels of motivation, I encountered many moments where I found it extremely difficult to continue and the tactics outlined above were not working. Thus, necessitating engagement in a self-reflection exercise, which entailed an introspective examination aimed at getting to the root cause of not being able to work on the task at hand. This reflective activity yielded that either I was not sufficiently clear on the details pertaining to the topic, or was not clear on how to approach the writing i.e. there were some flaws in my storyboard. Once, I was able to overcome these I found that my motivation levels normalized and I was able to continue forward. A few times, it resulted that the task at hand was a monotonous one, such as making the causal maps in Chapter 6 or reading and re-reading the interview documents to make sense of what actually was going on in the projects and how best to retell the story. I found that working on the thesis in pieces really helped in such instances and positioning the given task against a short-term and mid-term goal really helped.

Working Under Threats

There were some terrifying incidences that took place while I was collecting data that made the Ph.D. more exciting than it ought to have been. Without going into much detail, following are some of the events that transpired: I narrowly missed a road side bomb explosion while en route to meet with a respondent. I witnessed an incident where local villagers came wielding guns during a movie filming sequence and almost shot my respondent. I got stuck in flash floods while collecting data and ended up losing some precious data from the dam extension project. There were also some lucky breaks where areas or places I had just visited were hit with acts of violence after my visits. In such cases, I thankfully did not witness the carnage firsthand.

7.6.1 Conclusion

Over these last three years and four months I learnt to think deeper and developed a knack for presenting a lot of competing ideas together. I like to think, that my writing got better, but I can still see many areas where I can improve it further. Things that I enjoyed the most about the Ph.D. were when I was actually thinking about and synthesizing existing ideas while I worked on formulating my own and when I really learnt something new. What I hated the most perhaps were the phases of monotonous activities, such as feeding data into EndNote or working on the same diagram over and over again because it was just not good enough, or rewriting a section because it did not make any sense.

In conclusion I could not have done this without the support of my friends, family, and supervisor. The path to a Ph.D. is not impossible but it certainly is difficult, and having the right people around you to help you, pat you on the back, and give you the strength to carry on certainly helps. I am happy that I received such an amazing opportunity to complete my doctorates and to learn and grow as a researcher. I really enjoyed the thrill of working under the uncertainty behind every step of the research process and I will always cherish the moments where I discovered or learnt something new.

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Appendix A

Project Management Schools of Thought

Inspired by the work of Mintzberg (1990) and Mintzberg et al. (1998), which identifies ten schools of thought in management, other more informative project centric taxonomies have also been proposed. Rather than focusing on arbitrary time frames these concentrate instead on categorizing the developments in project management research by subject areas, our literature survey reveals that three such categorizations exist. The first was proposed by Söderlund (2004b) in which he identifies seven schools of thought in project management, these are: The optimization school, critical success factor school, contingency school, behavior school, transaction cost school, decision school, and marketing school. Some of these were later renamed, however their substance remained primarily the same; the new names are: The optimization school, factor school, contingency school, process school, governance school, decision school, and relationship school. Although, Söderlund (see, Söderlund, 2009b) claims that the schools of thought is an area receiving a lot of interest from the academic community however, our literature survey reveals a handful of contributors, these include: Two papers in learned journals (Söderlund, 2002, 2009b); one editorial (Bredillet, 2007) that was later presented as a short paper by Anbari et al. (2008) and eventually expanded into a book by Turner et al. (2010); and a conference paper by Alojairi and Safayeni (2009).

The taxonomy by Anbari et al. (2008) is more verbose in its categorization and identifies nine schools of thought within project management, these are: The optimization school, success school, contingency school, behavior school, governance

school, decision school, marketing school, process school, and modeling school. Although, the intent of both the authors is to provide labels for classifying the developments in the field however, Anbari et al.'s (ibid) two additional schools of thought (i.e. the process school and modeling school) are a 'misunderstanding' and add an 'additional dimension of analysis' to the field of project management (Söderlund, 2009a), the implications of which are in need of further discourse. Additionally, the complexity school of thought is completely ignored by both authors and its inclusion may extend the proposed schools rendering them more holistic and representative of the developments within the field. Although, Söderlund (2002) hints at the optimization school's efforts as a means to overcome complexity by breaking down tasks into smaller activities, however the operations research & management science approach they propose is focused only on linearly determined order and does not work well with projects that are complex or chaordic. The parallels between the three proposed schools of thought may be more explicit in the form of a table, see Table A.

Similarly a collection of five management focuses within projects have been identified by Alojairi and Safayeni (2009). However their schools of thought, other than using a new set of terms for some of the schools, do not contribute anything new to our discussion, thus their work will not be discussed any further.

Other nomenclatures have also been proposed, which are much broader in their treatment of the developments in project management. Although, such nomenclatures are helpful in making some sense of the developments taking place within the discipline, the higher order abstraction followed by such approaches renders them infeasible for cultivating a detailed understanding of the major developments driving the subject area. One such example is the work of Cicmil and Hodgson (2006a) in which they have dichotomized the developments in project management as falling either into the mainstream literature or the critical success factors literature – where, the former is characterized by a language of design, regularity, and prescriptions for humans to control complexity (Stacey, 2001, Wood, 2002) and the latter examines these as to why projects still fail despite the developments taking place in the mainstream literature (Frame, 1994, Morris, 1994, 1995, 1999, Maylor, 2001, 2005).

Table A.1: Parallels between the Schools of Thought, adapted from Söderlund (2002, 2009b), Anbari et al. (2008), and Turner et al. (2010)

Söderlund (2002)	Contributing Factors	Söderlund (2009b)	Contributing Factors	Anbari et al. (2008) & Turner et al. (2010)	Contributing Factors
Optimization School	Planning and breakdown techniques of complex tasks. Focus on how projects are planned and managed. Strives to optimize project implementation through planning	Optimization School	Logic-based, prescriptive research drawing on management science, optimization techniques, and system analysis, published in the traditions of management science and operations research	Optimization School and Modeling School	Focus is on optimizing outcome of projects using mathematical tools. Takes influence from operations research domain. Use of hard and soft systems theory to model the project
Critical Success Factor School	Success factors and project outcomes. Investigates what determines project success. Strives to target project organization by factors	(Critical Success) Factor School	Empirical research relying on descriptive statistics on the criteria and factors of project success and failure with a prescriptive orientation. Primarily published in literature on product development and innovation	Success School	Examines the project as a business objective. Analyzes success & failures and identifies causes. Focus is on factors internal to the project
Contingency School	Analyzes project organization design. Examines how project organizations differ. Recommendations focus on adapting project organization to contingencies	Contingency School	Empirical research, case-study and survey-based research on the difference between projects and their contextual dimensions. Primarily published in the tradition of organization theory and product development, with an ambition to draw prescriptive conclusions about organizational structures	Contingency School	Examines the project from the perspective of adaptability. Categorizes the project type to select appropriate systems. Influenced by contingency theory, leadership theory
Behavior School	Analyzes project organization processes. Examines how project organizations behave. Focus is on altering shaping processes of project organization	Process School	Interpretative and descriptive research on organizational processes, behavior and learning in projects. Mainly published in the traditions of organization theory, management studies and organizational behavior	Behavior School	Examines the project as a social system. Analyzes the management of relationships between people on the project. Influenced by OB/HRM
Transaction Cost School	Analyzes governance of project organizations/transactions. Investigates how project (transactions) organizations are governed. Focus is on governance issues related to projects	Governance School	Prescriptive research on governance and contract problems in project settings. Primarily published in the tradition of organization and management theory	Governance School	Examines the project as a legal entity. Analyzes the governance of the relationships between project participants. Influence. Focus is on contracts & law, governance, transaction costs, and agency theory
Decision School	Analyzes the interplay between actors in the early stages of projects. Examines how multi-organizational projects behave in the early phases. Focuses on politicking and positioning in the projects project network	Decision School	Descriptive and interpretative case-study based research on politics and decision-making in projects. Primarily published in the tradition of decision making and organization theory	Decision School	Examines the information processing through the project life cycle. Influenced by decision sciences and transaction costs
Marketing School	Analyzes management of the formation phase of projects. Examines how the early stages of projects are managed. Focuses on issues related to forming and championing projects	Relationship School	Descriptive case-study based research on relationships between actors in projects. Above all, published in the tradition of (industrial) marketing	Marketing School	Examines the project as a 'billboard' which is used to communicate with all stakeholders to obtain their support. Influenced by stakeholder management and governance strategy
				Process School	Examines the project as a means to an end. Explores the appropriate path to the desired outcome. Influenced by information systems and strategy

Appendix B

Survey Instrument

The precise questions asked in the survey are presented below:

Project Classification Questions

Q1. The project on which you are presently working on belongs to which of the following sectors?

- | | |
|---------------------------|-------------------|
| 1. Pharmaceuticals | 11. Advertising |
| 2. Consumer Electronics | 12. Entertainment |
| 3. Telecommunications | 13. Healthcare |
| 4. Information Technology | 14. Insurance |
| 5. Financial Services | 15. Construction |
| 6. Automobile | 16. Travel |
| 7. Defense | 17. Consulting |
| 8. Energy | 18. E-Commerce |
| 9. Software | 19. Other _____ |
| 10. Manufacturing | |

Product Description

Q2. Please provide a short description of the product produced by the project:

Project Description

Q3. Please provide a short description of the scope of the work in the project:

Project Type

Q4. Please select the appropriate product novelty of the project:

1. Derivative (Improvement)
2. Platform (A new generation in an existing product line)
3. Breakthrough (A new-to-the-world product)

Q5. Please select the appropriate *technological uncertainty* of the project:

1. A Type: Low-Tech (No new technology)
2. B Type: Medium-tech (Some new technology)
3. C-Type: High-tech (All or mostly new but existing technologies)
4. D-Type: Super-high-tech (project will use nonexistent technologies at project initiation)

Q6. Please select the appropriate *complexity* of the project:

1. Assembly (A subsystem – performing a single function)
2. System (A collection of subsystems – performing multiple functions)
3. Array (System of systems – a widely dispersed collection of systems serving a common mission)

Q7. Please select the appropriate *pace* of the project:

1. Regular (Delays not critical)
2. Fast/competitive (Time to market is a competitive advantage)
3. Time-critical (Completion time is critical to success, window of opportunity)
4. Blitz (Crisis project)

Q8. Business Goal

1. Operational (Extension of existing business)
2. Strategic (Creating a new business)

Q9. Customer

1. External (External contract or consumers)
2. Internal (Internal users or another departments)

Q10. Strategic Goal

1. Extension (Improving, upgrading an existing product)
2. Strategic (Prime – creating strategic positions in businesses through new products or markets)
3. Problem solving (Acquiring or develop a new technology or a new capability)
4. Maintenance (Routine maintenance, fixing regular problems)
5. Utility (Keep the lights on – acquiring and installing new equipment or software, implementing new methods or new processes, reorganization, reengineering)
6. Research and development (Study – exploring future ideas, no specific product in mind)

Q11. What is the size of your project team?

Q12. Which phase of the project lifecycle would you place your project?

1. Initiating
2. Planning
3. Executing
4. Phase out
5. Maintenance

Q13. What is the total budget of your project (in US dollars)?

Q14. In which country and city is your project being implemented?

Q15. How would you rate your project teams' competence in managing projects similar to your current project?

- a. Novice
- b. Advanced Beginner
- c. Skilled
- d. Expert

Q16. What percentage of the project work is contracted out?

Questions inquiring into the research questions

1a: What drives project conflicts & negotiations?

Q17. What are the top five reasons of conflicts during your current project?

1.	
2.	
3.	
4.	
5.	

Most Frequent

Least Frequent

Q18. In thinking about the project lifecycle what are the two most prevalent conflicts in each phase? (Please use the row numbers from you answer to the previous question).

	Initiating	Planning	Executing	Monitor & Control	Phase out
1.					
2.					

Q19. What are the top five reasons for negotiations being undertaken during your project?

1. _____ Most Important
2. _____
3. _____
4. _____
5. _____ Least Important

1b: How do these drivers drive project conflict & negotiations?

There is no question in the survey pertaining to this research question.

2a: How do projects behave in the presence of conflict and negotiated action?

Q20. Does your project behave any differently when it is experiencing conflicts and negotiations than when it is not?

1. Yes
2. No

If you answered YES to question 20 then please answer question 21

Q21. How is the behavior of your project different when it is experiencing conflict? Please explain.

Q22. What words can be used to best describe a project experiencing conflicts & negotiations?

1. _____ Best description
2. _____
3. _____ Good description
4. _____
5. _____ Fair description

2b: Is there a pattern to how project behave in the presence of conflict and negotiated action?

Q23. Do you find that there is a pattern to the behaviour of projects when there is conflict and negotiation taking place?

1. Yes
2. No

Q24. If you answered YES to question 23, can you explain?

3a: Does a project having a heterogeneous cultural makeup experience conflict differently than a project with a homogenous cultural makeup?

3b: How does a project having a heterogeneous cultural makeup experience conflict differently than a project with a homogenous cultural makeup?

Q25. Are you presently or have recently worked on a project that was heterogeneous in its cultural make up:

- a. YES
- b. NO

If you answered YES to question 25 then please answer question 26.

Q26. Which nationalities or cultures were represented on the project?

1. _____
2. _____
3. _____
4. _____
5. _____

Q27. Reflecting against your experience in projects would you say that a project which is culturally heterogeneous experiences conflicts and negotiates differently than a project that is culturally homogeneous?

- a. YES
- b. NO

Q28. Referring to question 27, why do you think that?

4a: How does a project team working in a project experiencing conflict manage the conflict?

Q29. Prior to a negotiation or conflict resolution type activity, what does your project team do in order to manage conflicts when they arise?

- 1. _____ Most Frequent
- 2. _____
- 3. _____
- 4. _____
- 5. _____ Least Frequent

4b: What negotiation tactics does the team use?

Q30. What negotiation techniques does your project team use when they encounter conflicts?

- 1. _____ Most Frequent
- 2. _____
- 3. _____
- 4. _____
- 5. _____ Least Frequent

4c: When do they use these particular negotiation techniques?

4d: Why do they use these particular negotiation techniques?

Q31. Does your current project have a conflict management strategy?

- a. YES
- b. NO

Q32. If you answered YES to question 31, can you explain the strategy?

Q33. If you answered NO to question 31, then how do your team members decided which negotiation strategy to use when faced with a conflict? Can you explain?

Q34. Is there anything that we may have neglected to ask and you would like share?

The survey concludes with a note of thanks and provides the respondents with the contact information of the researcher.

Appendix C

Survey Data Sample

An abridged version of the survey data is provided below.

Type	Novelty	TechnologicalComplexity	Phase	Goal	Customer	Strategic	Geo Team Size	Project Phase	Budget	Competence	Contracted	Conflict Management Strategy
Healthcare	Derivative	C	System	Regular	Operational	External	Extension	8	Executing	?	Skilled	0 No
Education	Derivative	A	System	TimeCritical	Operational	External	Extension	9	Initiating	0.71	Novice	90 No
Information	Breakthrough	C	System	TimeCritical	Operational	External	Utility	15	PhaseOut	0.0374	Skilled	80 No
Information	Derivative	C	Array	TimeCritical	Strategic	External	Strategic	25	Initiating	1.00	Skilled	50 Yes
Construction	Derivative	C	System	Blitz	Operational	External	Extension	15	PhaseOut	?	Expert	0 No
Construction	Platform	B	Assembly	TimeCritical	Operational	External	Strategic	50	PhaseOut	1.50	Skilled	60 No
Construction	Platform	C	System	Regular	Strategic	Internal	ProblemSolv	13	PhaseOut	0.0592	Novice	100 Yes
Construction	Breakthrough	A	System	Blitz	Strategic	Internal	ProblemSolv	13	Executing	0.5426	Advanced Bt	100 Yes
Advertising	Breakthrough	D	Array	Regular	Operational	Internal	ResearchDev	20	Initiating	?	Skilled	?
Construction	Derivative	A	System	Fast	Operational	Internal	Extension	14	Executing	0.119	Skilled	100 Yes
Irrigation	Derivative	C	System	TimeCritical	Operational	External	Extension	15	PhaseOut	?	Expert	0 No
SocialDevelo	Derivative	C	System	Blitz	Strategic	External	ProblemSolv	12	PhaseOut	?	Skilled	30 Yes
Pharmaceuti	Breakthrough	C	System	TimeCritical	Operational	External	ProblemSolv	8	Executing	0.02	Skilled	75 Yes
SocialDevelo	Derivative	B	Array	TimeCritical	Operational	Internal	Extension	4	Planning	0.0604	Novice	80 Yes
Advertising	Derivative	A	Assembly	Blitz	Operational	External	Extension	5	PhaseOut	0.0592	Expert	70 No
Information	Platform	C	System	TimeCritical	Strategic	Internal	Strategic	5	PhaseOut	0.238	Expert	0 Yes
SocialDevelo	Platform	C	Array	Regular	Operational	Internal	ProblemSolv	3	Executing	0.0525	Novice	60 No
Construction	Breakthrough	A	Array	Regular	Strategic	Internal	Strategic	5	PhaseOut	3.619	Expert	100 No
Pharmaceuti	Platform	C	Assembly	TimeCritical	Strategic	External	Strategic	18	Executing	0.025	Advanced Bt	50 No
Construction	Platform	A	Array	TimeCritical	Strategic	Internal	Extension	7	PhaseOut	11.45	Expert	100 Yes
Consulting	Platform	B	System	TimeCritical	Operational	Internal	Extension	12	PhaseOut	0.13055	Expert	40 Yes
Engineering	Platform	B	System	Fast	Operational	Internal	Utility	10	Executing	107.145	Expert	30 No
Construction	Derivative	A	Assembly	TimeCritical	Operational	External	Utility	14	PhaseOut	2.595	Expert	33 No
Construction	Derivative	B	System	Regular	Operational	Internal	Extension	5	Maintenance	2.14	Expert	100 Yes
Construction	Derivative	B	Array	TimeCritical	Operational	External	Extension	10	Initiating	25	Expert	100 Yes
Healthcare	Derivative	C	Array	Blitz	Operational	External	ProblemSolv	30	Executing	1.90	Expert	95 No
Construction	Breakthrough	C	System	Regular	Strategic	External	Utility	24	PhaseOut	6.44	Skilled	100 Yes
Construction	Derivative	C	Assembly	TimeCritical	Operational	External	Strategic	12	Executing	0.4345	Expert	100 No
Construction	Derivative	C	System	Regular	Strategic	External	Strategic	25	PhaseOut	2.38	Skilled	100 Yes
Mining	Platform	C	System	Regular	Strategic	External	Extension	15	Executing	9.9	Expert	25 No
Healthcare	Derivative	A	Assembly	Regular	Strategic	Internal	ProblemSolv	8	Executing	8.9	Expert	0 Yes
Telecommun	Derivative	C	Array	TimeCritical	Operational	Internal	Extension	20	PhaseOut	10	Expert	30 No
Manufacturi	Platform	C	System	TimeCritical	Operational	External	Extension	5	Executing	0.1762	Expert	0 No
Construction	Platform	A	System	TimeCritical	Operational	Internal	Extension	8	Executing	5.3	Skilled	80 Yes
Education	Derivative	C	System	TimeCritical	Strategic	Internal	Strategic	35	Executing	1.50	Skilled	30 No
Agriculture	Derivative	B	System	Fast	Operational	External	Extension	15	PhaseOut	?	Expert	90 No
Construction	Breakthrough	C	Array	TimeCritical	Operational	External	Utility	?	PhaseOut	335	Expert	100 Yes
Entertainment	Breakthrough	B	Assembly	Regular	Operational	Internal	ProblemSolv	25	PhaseOut	0.6	Expert	0 No
Healthcare	Derivative	B	System	Regular	Operational	External	Extension	5	Executing	0.02	Skilled	70 Yes
ConsumerEle	Platform	B	System	Fast	Operational	Internal	Extension	26	Executing	2.2	Advanced Bt	50 Yes
Energy	Derivative	C	System	Regular	Operational	Internal	Utility	15	Executing	0.155	Expert	50 No
Socialwork	Platform	C	System	Blitz	Strategic	Internal	Utility	80	Executing	15	Skilled	0 No
Mining	Platform	C	System	Regular	Operational	Internal	ProblemSolv	20	Executing	4.76	Skilled	40 Yes
Construction	Breakthrough	B	System	Regular	Strategic	External	Utility	20	Executing	2.38	Expert	40 Yes
Engineering	Derivative	C	Array	Regular	Operational	Internal	Utility	7	PhaseOut	10.7	Skilled	60 Yes
Energy	Platform	B	Array	Regular	Operational	Internal	Utility	60	Executing	0.238	Skilled	0 Yes
Construction	Breakthrough	C	System	Regular	Operational	External	Utility	25	Executing	8.89	Expert	40 No
Healthcare	Platform	C	Array	Regular	Operational	Internal	Extension	60	Executing	0.1542	Skilled	20 Yes
Irrigation	Platform	C	Assembly	Fast	Operational	Internal	Extension	4	Maintenance	0.38	Expert	70 No
Healthcare	Derivative	C	System	Regular	Operational	Internal	Extension	11.5	Executing	11.5	Skilled	10 No
Insurance	Platform	A	Assembly	Regular	Operational	External	Strategic	5	Maintenance	0.074	Skilled	0 Yes
Construction	Platform	B	Array	TimeCritical	Strategic	Internal	Problem Solv	4	PhaseOut	1.626	Skilled	100 Yes
Energy	Derivative	D	Assembly	TimeCritical	Operational	Internal	Extension	60	PhaseOut	1.19	Expert	20 Yes
Education	Breakthrough	C	Array	Fast	Operational	Internal	Extension	3	Executing	11.9	Expert	0 No
Information	Platform	C	System	TimeCritical	Operational	Internal	Extension	5	Executing	?	Skilled	0 Yes
SocialDevelo	Derivative	A	Array	Regular	Operational	Internal	Extension	5	Executing	1.45	Expert	0 Yes
Construction	Platform	B	Array	Regular	Operational	Internal	ProblemSolv	8	Executing	5.053	Expert	0 No
Healthcare	Derivative	C	Array	Regular	Operational	Internal	Extension	82	Executing	0.952	Skilled	10 Yes
Construction	Platform	A	System	Regular	Operational	Internal	Extension	5	Executing	0.178	Skilled	0 No
Education	Derivative	B	System	Fast	Strategic	External	ResearchDev	5	PhaseOut	0.025	Advanced Bt	10 Yes
Construction	Derivative	B	Array	TimeCritical	Operational	Internal	Extension	15	Executing	12	Expert	5 No
Construction	Platform	B	System	TimeCritical	Strategic	Internal	Extension	4	Executing	10	Skilled	10 No
Entertainment	Platform	B	System	TimeCritical	Operational	External	Extension	15	PhaseOut	0.0592	Skilled	80 No
Wellness	Derivative	A	Array	Regular	Strategic	External	Extension	15	Executing	0.052	Advanced Bt	0 Yes
SocialDevelo	Platform	A	System	Blitz	Operational	External	Extension	18	Planning	0.119	Skilled	70 Yes
Construction	Derivative	B	System	Regular	Operational	External	Extension	12	Executing	1.107	Expert	30 Yes
Information	Derivative	A	System	Regular	Operational	Internal	ProblemSolv	6	PhaseOut	0.475	Expert	0 No
Education	Platform	A	Array	Fast	Operational	Internal	Extension	7	PhaseOut	2.619	Skilled	70 No
Defense	Platform	C	Assembly	Fast	Strategic	Internal	Strategic	5	Executing	1.5	Skilled	30 No
Defense	Derivative	C	System	Fast	Operational	Internal	Extension	15	Planning	0.05	Skilled	30 Yes
Defense	Platform	C	Array	Fast	Operational	Internal	Extension	10	Executing	33	Expert	30 Yes
Defense	Platform	A	Array	Regular	Operational	Internal	Maintenance	80	PhaseOut	0.248	Skilled	100 Yes
Construction	Platform	B	Array	Regular	Strategic	Internal	Extension	4	PhaseOut	0.0297	Skilled	0 No
Construction	Platform	C	Array	Regular	Operational	External	Extension	13	PhaseOut	2.38	Skilled	0 No
Entertainment	Breakthrough	C	System	TimeCritical	Strategic	External	Strategic	5	Executing	0.0197	Expert	50 Yes
Insurance	Platform	B	System	Fast	Operational	External	Extension	7	Executing	0.142	Skilled	0 No
Entertainment	Platform	A	Array	Regular	Strategic	External	Strategic	3	Maintenance	?	Skilled	0 No
Entertainment	Platform	A	Array	TimeCritical	Operational	Internal	Extension	10	Planning	0.0119	Expert	0 No
Construction	Derivative	B	Array	TimeCritical	Operational	Internal	Strategic	10	PhaseOut	0.952	Expert	50 Yes
Entertainment	Platform	B	Array	TimeCritical	Strategic	External	Extension	8	PhaseOut	0.0028	Expert	0 No
Construction	Breakthrough	C	Array	Regular	Operational	Internal	Utility	40	Executing	0.024	Expert	90 No
Entertainment	Derivative	A	Array	Regular	Operational	Internal	Extension	14	PhaseOut	0.0147	Expert	10 No
Consulting	Platform	C	System	Fast	Operational	External	ResearchDev	60	Executing	?	Expert	20 Yes

Appendix D

Request for Permission

Letter sent to prospective projects seeking permission and access.

Address of Targeted Project
123 Street
Any Town, Pakistan

Dated: Date/Month/Year

Subject: **Request for permission to include [Name of Project] in a Doctoral Study**

Dear [Name Here],

I am pursuing PhD Studies at the University of Southampton. The topic of my study is “the role of conflicts & negotiations in the complexity of projects” which falls under the broad umbrella of project management associated research.

For my thesis, deriving from my research objectives and research questions I have decided to follow a case study methodology. This entails a thorough study of a few (4 to 5) running projects. For this purpose I am writing to request permission to include your project ([Name of Project]) in my study.

As yours is complex project, I feel it would be great opportunity for me study this project as a part of the thesis work. I am confident that tremendous learning can come from this project that can be of benefit to both of us.

For this purpose I seek you permission to:

- a. Speak to project personnel and interview them
- b. To sit in on project related meetings and to observe the proceedings
- c. To be made privy to project related documentations
- d. To observe the day to day workings of the project in general
- e. To speak to members of our project advisory board

I would be grateful if you would please consider my request. I assure you the utmost privacy of documents and conversations and anything included in the thesis will be with your prior consent.

Looking forward to your facilitation in this regard.

Kind regards,

Saleem Gul

Appendix E

Study Outline

The following study outline was provided to participants to inform them about the precise nature of the research study.

Area of Study: Role of Conflict & Negotiations in the Complexity of Projects – A Multiple Case Study

Investigator: Saleem Gul, BS (Indiana, USA), MS (Maryland, USA), Ph.D. Candidate
University of Southampton, UK

Thesis Supervisor: Prof. Terry Williams, Head of School, School of Management, University of Southampton, UK

This multiple case study will focus on complex projects in both the private and public sectors of Pakistan. The selected cases are from two distinct areas: Engineered projects (that produce physical products) and non-engineered projects (that result in services). The proposed study covers projects such as dams, mining, construction, film-making and training & development. The empirical data collection process is focused on conflict and consequential negotiated action within the project, the study is interested in exploring both inter- and intra-group conflict and negotiations arising during the project phases.

Invitation to Participate & Purpose: The purpose of this study is to investigate how project centric conflict and negotiated action contribute to the complexity of projects. The study proposes to explore, explain and describe the dynamic of conflict and negotiations in the context of complexity. It is an under-explored area of projects and the research will entail a phenomenological exploration of live projects, data collection will involve:

1. Interviews
2. Review of company records as related to this topic such as memo's and report's
3. Observations through participation in company meetings

This research is a part of the Project Management domain and is being conducted as a part of the researcher's Ph.D. requirements. The wish it to interview selected or recommended individuals within your organization based on their professional knowledge and experience with the above identified issues.

Interview Selection Process: Individuals will be selected to participate in this study at your organization using the following process. Organizations invited to participate are asked to identify personnel in management and staff positions e.g. project sponsor, project manager, project team member, additional manager, etc. who participate or participated in complex projects. Individuals will be chosen primarily due to their roles on the project and their knowledge in a professional capacity. Their professional views will be sought in this study. If they decide to participate, their interview will constitute one of approximately 20 – 40 for this study.

Research Design: This type of study is called a multiple or multi case study. Within each case (company or organization), participants are selected according to their involvement or role(s) on a particular complex project. Since the study is about perceptions and experiences, gathering information in the context of a specific project helps simplify data collection.

Participant Role: The semi-structured interviews may take up to 90 minutes, or more, depending on how much information is shared. Approximately 15 open-ended questions will be used to facilitate discussion. Supplemental questions may be used to pursue areas that seem fruitful during the interview.

Information Shared: Participants will be provided with a brief overview of the study at the start to minimize bias in data collection. Upon request, a copy of the final report will be made available.

Withdrawal from Study: Participants have the right to withdraw from the study at any point in time. Your participation is entirely voluntary.

Information Privacy: During the process of this research the researcher employ a snowball sampling technique to identify employees/individuals related to specific projects. The researcher will then contact selected employees/individuals identified. Any information obtained will not be shared on an individual basis, rather on an aggregate basis. Your identity as a participant in this study, and any other information gathered during the study, will be confidential. Pseudonyms will be used in all data collection and reporting methods. The researcher, and his supervisor, will be the sole persons with access to the information collected and to the identity of the subjects. Numbers will identify the interviews and the identity of participants will be excluded from all published materials related to this study. All responses to questions may be cited in the Ph.D. Dissertation and related publications.

Data Storage: All data collected will be stored in locked cabinets, accessible only to the researcher, during the study. Upon completion of the study, the data will be retained and then disposed according to the policy of the University of Southampton, UK.

Debrief Session: A de-brief session will be offered to each firm at the end of the study. The session will summarize the purpose and objectives of the study as well as preliminary findings in terms of themes and patterns. Participants will be given time to ask questions and comment on findings.

Study Benefits: Study benefits to organizations involve a) Having a conflict & negotiation inventory conducted; b) Gaining insights on project management and role of conflict and negotiated action on project complexity; c) Self and firm awareness of conflict and negotiation practices; d) The altruistic element of contributing to research in estimation and project management.

If you have further questions concerning matters related to this research, please contact:

Saleem Gul, Doctoral candidate University of Southampton, UK Phone: +92-(0)91-xxxxxxx (PAK); +44-(0)788xxxxxxx (UK). Email: s.gul@soton.ac.uk

Appendix F

Consent Form

Project Title: Role of Conflict & Negotiation in the Complexity of Projects

Researcher: Saleem Gul is a doctoral candidate in the School of Management at the University of Southampton, UK.

Advisor: Prof. Terry Williams is the Head of School of Management at the University of Southampton, UK.

Purpose: I will be conducting a study using interviews, meeting observations, and examining archival data to understand conflict & negotiation in organizational projects.

Time: The interview should take from 30 to 90 minutes depending on how much you choose to participate and on what you have to contribute. Interviews will not be tape recorded, but rather short notes will taken and causal maps developed. A few days after the initial interview, you may be contacted by phone to arrange a final brief meeting of no more than 30 minutes, to review and verify that the causal maps and interview notes adequately reflect the original intent of your comments.

Voluntary: Your participation is voluntary. You may quite at any time and may refuse to answer any question.

Risk: There is minimal risk involved with this study. There is no more risk than you would experience during your daily interactions.

Benefits: The results of this study may help organizational projects be more effective.

Confidentiality: Neither your identity nor the identity of your project will be revealed in either the transcripts, written documents, or verbal presentations of the data.

Contact: If you have any questions, feel free to contact me, Saleem Gul at +92-91-xxxxxxx. You may also email me at: s.gul@soton.ac.uk

Thank you for your participation.
Saleem Gul, Doctoral candidate

Signature _____ Date _____

Appendix G

Interview Guide

The following questions constitute the interview guide for this study. Although, these questions are by no means constitutes a conclusive list, however, they serve to establish the direction of the interviews and to maintain focus. Probing questions will be asked at the appropriate point during the interviews and at the discovery of points of interest to the study.

Project Background Questions

1. Tell me about your current project? Such as how many persons are there on the project management team, what is the project nature, and what phase of the project development lifecycle are you presently in?
 - a. Would you like to add anything else to the description you have just provided me?
2. Do you consider this to be a fairly straightforward project or a complex effort? Can you elaborate?
 - a. What is your understanding of complexity?
 - b. Would you say there is any similarity between this project and other projects that you have worked on in the past? Can you explain?
3. Is the project composed of completely new team members or has this team worked together on previous projects?
 - a. Would you say the team you have working with you is representative of a 'typical' team?
4. What nationalities and ethnic groups are represented in this project?
 - a. What percentage of the project staff is female?
5. Who has authority over this project?
6. Is the person with authority different than the project manager?
7. How frequently does the project team meet to discuss issues? Who calls the meetings and sets the agenda?

Phenomenon Related Questions

1. Who is responsible for the technical details of the project?
2. How are technical disputes handled?
3. Are there any other kinds of disputes and conflicts that happen in your project? Can you elaborate?
 - a. What would you say would be the top few conflict drivers in your project?

- i. Which conflicts do this cause?
 - b. Are there any other kinds of conflicts you would like to share?
- 4. How do you identify a conflict?
 - a. What do you do when you spot a conflict?
 - b. What measures do you take to manage this conflict and prevent it from escalating?
- 5. What happens if you can't manage a conflict and it escalates; how to you deal with it then?
 - a. What negotiation strategies do you use?
 - b. Why these?
 - c. Are there any other strategies?
 - d. Why not any of these?
 - e. Who chooses the strategy?
 - i. Why? And How?
 - f. What if the strategy isn't working, how do you identify its failure?
 - i. What do you do then?
 - ii. Why?
- 6. How does the project team deal with internal conflicts?
 - a. Are there any interpersonal conflicts that happen on the project team?
 - b. Can you elaborate?
 - c. How do you manage these?
 - i. Why?
- 7. How does the project team deal with external conflicts?
 - a. Do they always choose the same method as you described?
 - b. How is the choice made then?
 - i. Why this? Why not something else?
- 8. What is different in a project when it is experiencing conflicts and negotiations?

- a. Why do you think that?
 - b. Will a project in conflict ever become 'normal'?
 - i. How?
 - ii. How do you know when it is no longer 'normal'?
 - iii. What do you do to make it 'normal'?
 - c. What if it doesn't become 'normal' will the work still continue despite the conflicts and negotiations?
 - d. How does the project team deal with this?
9. Do negotiations happen only after a conflict takes place or is it possible to have pre-negotiated agreements?
- a. How are these enacted during the project?
 - b. Are they useful?
 - i. How?
10. Do you think culture has a role in project conflicts?
- a. Is it an adverse role of a positive role?
 - b. Would a project that is all homogeneous culture be better at dealing with conflict?
 - i. Why?
 - c. How does your present project compare?
11. How do you choose which conflict to escalate and respond to?
- a. Have you ever left a conflict without pursuing it?
 - i. On what bases do you abandon a conflict?
 - ii. On what bases do you pursue a conflict?

Appendix H

Publications

- GUL, S. and KHAN, S. 2011. Revisiting Project Complexity: Towards a Comprehensive Model of Project Complexity. *2nd International Conference on Construction and Project Management IPEDR vol. 15*, September 2011 Singapore.
- GUL, S. 2010. Critical Realism: An Essential Tool for Researchers in Project Management. *British Academy of Management Conference 2010*, September 2010 Sheffield, UK.
- GUL, S. and WILLIAMS, T. 2010. Conflicts & Negotiations and their Role in Project Complexity. *Forum on Complex Project Management*, March 2010 Shanghai, China.
- GUL, S. and WILLIAMS, T. 2010. A Habermasian Examination of Conflicts in Projects. *5th Making Projects Critical*, January 2010, University of the West of England, Bristol, UK.