

From Conflict Styles To Behaviours - A Research Of Team Relationship Conflict, And Research Agenda For Indian Infrastructure Projects

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Abstract: Globally, 80% of projects fail to meet either schedule or budget, and about 50% of such failures are due to human factors. Conflict is inevitable between people working in cross-functional project teams; further, task-oriented conflict is constructive and is needed to make progress. However, person-oriented or Relationship Conflict can be destructive - arising from differences in beliefs, values, attitudes and communication styles. Relationship Conflict is found to cause counterproductive work behaviour and affect team cooperation, creativity, cohesion, learning, even mood & sleep, leading to schedule delays and budget increases, accounting for up to 27% of the variation in project performance. Several antecedent factors are identified, including team diversity, personality and leadership, with a focus on aspects of behaviour and processes which may be more amenable to control. Among the resolution approaches, the Project Management Institute's style-based proposals are studied, along with later developments which emphasise communication, mediation and negotiation of interests, rather than rights or power. Focussing on behaviour, both destructive and constructive, and the "hot buttons" to control, has been found to provide helpful tools to grow conflict resolution behaviours & skills, with the necessary organisational commitment. Actual studies of Relationship Conflict behaviour in project teams per se and its impact on performance are limited; particularly in the context of Indian infrastructure projects. A survey is envisaged to assess the current practices and improvement possibilities. The basis and method for conducting such a detailed study are described, with the objective of better management of the phenomenon, enhancing teamwork and improving project performances.

Keywords: Relationship Conflict, Conflict Resolution/Management, Project Management

I. INTRODUCTION

What distinguishes a project is its transient nature - a temporary grouping of people and resources. It has a definite beginning and end, evolving and changing over time, unlike continuous operations. Central to all projects is the belief that the best *outcome* can be achieved by grouping specialists from different functions in a "*matrix*" form. Suitably *structured & empowered* teams are formed based on competence, including members who may not have worked together earlier. A *contract* is agreed with the client defining scopes, time & cost, which form the *iron triangle* of execution. (The italicised terms would be different across projects.)

Elgoibar et al. (2017) state that it is natural for people with diverse skills and norms working in teams, making decisions and endeavouring to meet project goals, to have conflicts. Phillips (2011) states that managing conflict is a natural concomitant of teamwork, arising from the "clash of

perceptions, goals and values in an arena where people care about the outcome".

Organisations endeavour to use Project Management (PM) "best practices" to promote collaboration by established methods, such as training in HR skills, joint kick-off and review meetings, team-building events, instant messaging and digital communication, frequent status-sharing and trouble-shooting, integrated project planning and monitoring.

"Pulse of the Profession" published annually by the Project Management Institute (2017) reveals that globally, 71% of respondents report embracing "Agile" project management practices, in one form or other. However, 28% of projects were reported failures, over 30% of completed projects exceeded the budget, and about 50% could not be completed on time or had scope creep. Analysis of details in PMI's 2017 survey shows that almost 50% of project failures can be ascribed to "human factors" during execution: such as *behaviour, communication, culture, knowledge, leadership, learning, trust, conflict*, competence - following Pasion et al. (2015), as shown below. (Italicised items are factors in relationship conflict).

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Table 1. Primary Causes of Project Failures - top three, from PMI (2017)

Top 3 Causes of Project Failure (as per PMI survey)	PMI data (Global Total)	*Human Factors During Project:	*Other Factors in Project
Change in organisation's priorities	41%		9%
Inaccurate requirements gathering	39%		9%
Change in project objectives	36%		8
Inadequate vision/goal for project	30%	7%	
Inadequate/poor communication	30%	7%	
Poor change management	28%	6%	
Inaccurate cost estimates	28%		6%
Undefined opportunities and risks	27%		6%
Inadequate sponsor support	27%	6%	
Inaccurate task/time estimate	26%		6%
Resource dependency	23%	5%	
Inadequate resource forecasting	23%		5%
Limited/taxed resources	22%	5%	
Inexperienced project manager	20%	5%	
Task dependency	11%	3%	
Team member procrastination	11%	3%	
Other	11%		3%
Total:	433% (for 3)	47%	52%

*normalised percentage = (Global Total) x (100/433)

Pellerin (2009) states that engineers and specialists in complex development projects often have little regard for “touchy-feely-ness”, preferring to get on with the job with technical excellence. He believes that the interaction of individuals, how people gel - the “social context” - underpins the performance of projects far more than the

technical skills, especially when things go wrong. He identifies team “social risk” as a significant impact factor.

Cheung (2015) sees behaviour as having an insidious effect on project delivery. Traditionally, roles are defined in a project but not behaviours - individuals have the flexibility to adopt behaviours. Few people sabotage a project, but unhelpful or undesired behaviour impacts it.

Relationship conflict in project teams can thus be severely debilitating. This aspect of teamwork seems insufficiently addressed, from a behavioural standpoint. PMI’s “A Guide to the Project Management Body of Knowledge” or PMBOK Guide, 5th ed. (2013) - the “bible” for new aspirants - has just 1 page in 616 devoted to Conflict Management! Katz & Flynn (2013) state that most project organisations still lack a detailed understanding of conflict issues and integrated conflict management systems, continuing to use old grievance-type systems.

II. OBJECTIVE

The purpose of this paper is to synthesise research underlying our central question “How can we better understand relationship conflict behaviour in project teams?” Having explored the basis, we propose a study of Indian infrastructure projects to facilitate improved resolutions.

III. DEFINITIONS AND FRAMEWORK

Team conflict in the literature is of 3 types, namely task, relationship and process conflict:

- i) task-oriented or cognitive: from role ambiguity, task interdependence or resource scarcity
- ii) person-oriented or relationship, affective or emotional: from attitudes, behaviours, communication style, values or beliefs
- iii) process conflict: about task strategy or who should do what

A preliminary search suggested that related studies/journals in psychology, small group research, team performance management, human relations, organisational behaviour, social psychology, cross-cultural management and conflict management could provide insights.

IV. METHODOLOGY

Both database (Scopus) and manual searches were used. The search query devised was: ((*project OR work*) AND (*team OR group*)) AND ((*relationship OR emotional OR personal OR affective*) AND (*conflict OR dispute OR disagreement OR fight*)) and variations thereof.

V. RESULTS OF THE REVIEW

The studies are collated along the lines of the following themes, as part of the synthesis:

- Impacts of relationship conflict and task conflict
- The interdependence of task and relationship conflict
- Antecedents of relationship conflict



- Role of leadership in relationship conflict
- Processes of informal team conflict resolution
- All-pervading role of trust
- Formal models of team conflict resolution
- Discussion and implications

Each section has a summary table of simplified findings. All discussion is in the last section.

5.1 Impact of Relationship Conflict, compared to Task Conflict

There is no standard definition of project success; it is perceived differently by the organisation management, the project team and other stakeholders, as confirmed by Davis (2014). We find that performance refers to both “outputs” like cost/profit, schedule, safety, operability, quality/reliability, productivity, efficiency/effectiveness, innovation; and to internal “process” parameters like job satisfaction, trust, cohesion, creativity, learning & employee turnover.

Porter & Lilly (1996) found that conflict had a stronger negative correlation with performance in complex (decision-making or project) tasks than in more straightforward (production) tasks.

5.1.1 Effects of Task Conflict

He (2007) found that while task conflict interferes with performance, cognitive capability develops as team members work together and converts task conflict to constructive actions. Hoffart et al. (2015) observed that effective teams engaged in task-related debates, i.e. task conflict, unhindered by interpersonal tensions and logistic disagreements, i.e. low relationship and process conflict. Jehn & Mannix (2001) found that teams performing well had low but increasing levels of relationship and process conflict and moderate task conflict. Choi & Sai (2010) found that task conflict increases the group organisational citizenship behaviour (OCB), whereas relationship conflict

decreases it. Rispens et al. (2011) found that relationship conflict was associated with counterproductive work behaviour, moderated by group relational closeness. Both relational and task conflict increase avoidance, decrease compromise and confidence; but relational conflict also decreases self-devotion, organisational relations and cooperation/collaboration, contrary to task conflict, as per Qasemi et al. (2014). Meng et al. (2015) saw that relationship conflict between team members negatively affects information-seeking behaviour, but not so task conflict, the former being duly moderated by emotion management. Task conflict was found by Yong et al. (2014) to have a positive relationship with creativity and relationship conflict negative.

5.1.2 Consequences of Relationship Conflict

Vaux & Kirk (2014) found that relationship conflict causes schedule delays and budget increases, mitigated by superior communication and trust. When workload sharing was low, relationship conflict was harmful to performance, as observed by Alipour et al. (2017). Relationship conflict was found by Manata (2016) to hurt both task-based (i.e., decision accuracy) and social-based (i.e., social cohesion) aspects of performance. Zouher Al-Sibaie et al. (2014) found a significant relationship with two factors of conflict: internal and social, which contributed to about 27% of the variability in project performance. Relationship conflict was involved in the team size-performance relation, via a decrease in team cohesion, as per Espedalen (2016). Quigley et al. (2007) found a 3-way interaction between cohesion, its method of assessment, and relationship conflict on team performance. van Woerkom & van Engen (2009) found that relationship conflict negatively impacted team learning, which was a significant predictor of performance. Meier et al. (2013) found that relationship conflict influenced angry mood and somatic complaints.

Table 2. Summary of impacts of task & relationship conflict

Contributory Factors	Impact on Team Process	Impact on Team Output
<i>Task Conflict:</i>		
Time: conflict increases at first, eventually reduces Desirable: moderate task conflict at middle, low but increasing process conflict, and low relationship conflict, more at end	- avoidance - compromise & confidence + task-related debates + cognitive capability + group OCB + self-devotion + organisation relations + co-operation/collaboration + creativity	-interferes with performance + beneficial & constructive actions + effectiveness + performance
<i>Relationship Conflict:</i>		

Low group relational closeness Low emotion management Lack of communication & trust Low workload sharing Large team size	- group OCB & counterproductive work behaviour - avoidance - compromise & confidence - self-devotion - organisation relations - co-operation/collaboration - information seeking behaviour - creativity - social cohesion - team learning - mood & sleep	- schedule delays - budget increases -27% variance in performance - decision (in)accuracy
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(legend: - negative, + positive)

5.2 Interdependence of Task and Relationship Conflict:

Simons & Peterson (2000) found that task and relationship conflict are correlated; however, trust moderates this relationship. Huang (2010) observed that the type of team goal orientation and conflict management approach moderated the relationship. This relationship was weaker under conditions of high team learning but low team performance orientation. The relationship was also weaker among teams that engaged in cooperative conflict management.

5.2.1 Task Relationship Conflict Transformation

Choi & Cho observed that task conflict predicted a subsequent relationship conflict when groups had lower levels of trust. Curseu et al. (2012) found that task conflict has high chance to evolve into relationship conflict when groups have less efficient emotion regulation processes.

Holahan et al. (2011) hypothesised that geographically dispersed teams are likely to trigger affective conflict from task conflict because of higher reliance on technology-mediated communication. This has less social and contextual information, higher adverse attribution, more uninhibited behaviour and harsher language than face-to-face communication.

5.2.2 Relationship Task Conflict Correlation

Parayitam et al. (2010) observed that task conflict in top management teams is related positively to relationship conflict and negatively to agreement-seeking behaviour. Intra-group trust causes agreement-seeking behaviour and collaborating responses. O'Neill et al. (2013) state that team potency and cooperative/competitive/avoidance behaviours affect the linkage.

Table 3. Summary of the interdependence of task & relationship conflict

Influence	Causative factor/context	Moderator/curative factor
Task \square Relationship Conflict (transform, subsequently)	Lower trust levels Less efficient emotion regulation Geographically dispersed team	Strengthening mutual trust Resolving conflicts by co-operation Learning-goal oriented team Individual-team identification
Relationship \rightarrow Task Conflict	Adverse group affective behaviour Competitive and avoidant behaviours	Agreement-seeking behaviour Intra-group trust Cooperative behaviour
Task $\square\square$ Relationship Conflict	Influence weaker if team goal orientation is high-learning & low-performance, and there is cooperative conflict management	Trust (thro' conflict interpretation processes)



5.3 Antecedents of Relationship Conflict

5.3.1 Diversity

Huo et al. (2016) state that intra-personal team diversity, uncertain tasks, cultural diversity, and inappropriate behaviour increase relationship conflict. Rispens et al. (2011) state that relationship conflicts are harmful in relationally distant workgroups in which members are not familiar with and do not feel close to each other. Lount et al. (2011) state that there is a perception of higher relationship conflict when teams are described as “racially diverse” and not “homogeneous”. Cognitive diversity, i.e. team-member perceptions also increase relationship conflict and decrease agreement-seeking behaviour as observed by Parayitam et al. (2012). Liang et al. (2007) found that knowledge-diversity increases task conflict, which has a positive effect, but values-diversity increased relationship conflict, which reduced performance.

Mohammed & Agnell (2004) found that the diversity - conflict link is moderated by team orientation and process. Team orientation was found to minimise the adverse effects of surface-level (gender) diversity on relationship conflict.

Team processes reduced the damaging effects of “deep-level” diversity (time urgency) on relationship conflict. Alipour et al. (2017) found that the presence of high power-values diversity helped to reduce relationship conflict.

5.3.2 Members’ Personality

Tekleab & Quigley (2014) found that homogeneity in agreeableness, conscientiousness & emotional stability and heterogeneity in extraversion & teamwork preference weakens relationship conflict.

5.3.3 Team Psychological Safety

Alipour (2014) found that higher participative safety decreases relationship conflict. Martins et al. (2013) observed that low psychological safety renders expertise diversity to be negative.

5.3.4 Team Behavioural Integration

Camelo-Ordaz et al. (2014) observed that behavioural integration mediates effects of team tenure, intra-group trust and value consensus on relationship conflict in top management teams. Vodosek (2000) observed that divergent mental models of appropriate social interaction patterns affect conflict in groups. Marques Santos & Margarida Passos (2013) found that teams with similar Mental Models (TMM’s) have less relationship conflict and better effectiveness.

Table 4. Summary of Antecedent Factors’ influence on relationship conflict

<i>Elements of context</i>	<i>Impact on RC</i>	<i>Moderator, if any</i>
<i>Intra-personal team diversity:</i>		
-culture	Negative	Team orientation and team process
-relational distance	“	
-racial	“	
-cognitive/perception	“	
-values	“	
-gender	“	
-time urgency	“	
-knowledge	Positive	
-power value	“	
<i>Members’ personality:</i>		
-high extraversion and conscientiousness dyads	Negative	
-homogeneity in agreeableness, conscientiousness and emotional stability	Positive	
-heterogeneity in extraversion and preference for teamwork	Positive	
<i>Team Psychological Safety:</i>		
-higher participative safety climate, psychological safety	Positive	Expertise diversity, related to team performance Empowering leadership
-affective commitment	Positive	
-innovative and teamwork behaviours	Positive	
<i>Team Behavioural Integration:</i>		
-constructive-cooperative conflict management	Positive	
- team tenure, intra-group trust and value consensus	Positive	
- similar Team Mental Models (TMM’s)	Positive	

5.4 Role of Leadership in Relationship Conflict

Ziaaddini et al. (2013) found no direct impact of leadership quality on interpersonal conflict, except the mediating effect of organisational citizenship behaviour. Fodor & Riordan (1995) found that leaders high in power needs were rated lower in group conflict situations, on cooperative behaviour and analytical task-oriented problem solving, producing lower self-affect among members. Zhou & Shi (2014) state that leadership may be blamed for higher Relationship Conflict - LMX (leader-member exchange) differentiation was positively related to team relationship conflict, though ethical leadership weakened this relationship. Liu et al. (2015) observed that members' need for affiliation (NAFF) influences relationship conflict, and LMX differentiation has a moderating effect on the relationship of NAFF and relationship conflict. Aw &

Ayoko (2017) found that transformational leadership incited constructive debate, more than transactional or external leadership styles, but ignited affective conflict among groups. Leaders' transformational behaviours improved the followers' problem-solving conflict behaviours and quality of team member exchange. Kessler et al. (2013) observed that certain proactive leadership behaviours, rather than passive/avoidant models, led to negative emotions and counterproductive work behaviour. Yang & Li (2017) found that leaders' conflict-avoidance behaviour was perceived as positive by followers in specific contexts, concerning justice, trust and emotional wellbeing. Kotlyar et al. (2011) observed that pragmatic rather than charismatic leader behaviours ensured higher commitment, restraining dysfunctional conflicts.

Table 5. Summary of Leadership's effect on Relationship Conflict

Leadership aspect	Impact on relationship conflict	Moderator, if any
-leadership quality	None directly	Organisational citizenship behaviour (OCB)
-high power needs	Negative	Leader-member exchange (LMX), ethical leadership, Members' need for affiliation (NAFF)
-transformational	Negative (ignited affective conflict)	
-proactive	Negative (led to counterproductive behaviour)	
-avoidant	Positive (in the context of justice, trust & emotional wellbeing)	
-pragmatic, rather than charismatic	Effective (ensures higher commitment, restrains conflicts)	

5.5 Processes of Informal Team Conflict Resolution

Five modes of individuals' innate long-term/strategic preferences in handling conflict, also known as styles, were

initially proposed by Thomas & Kilmann (1974) as depicted below. Most of the discussion in the literature on interpersonal conflict is in terms of these "styles".

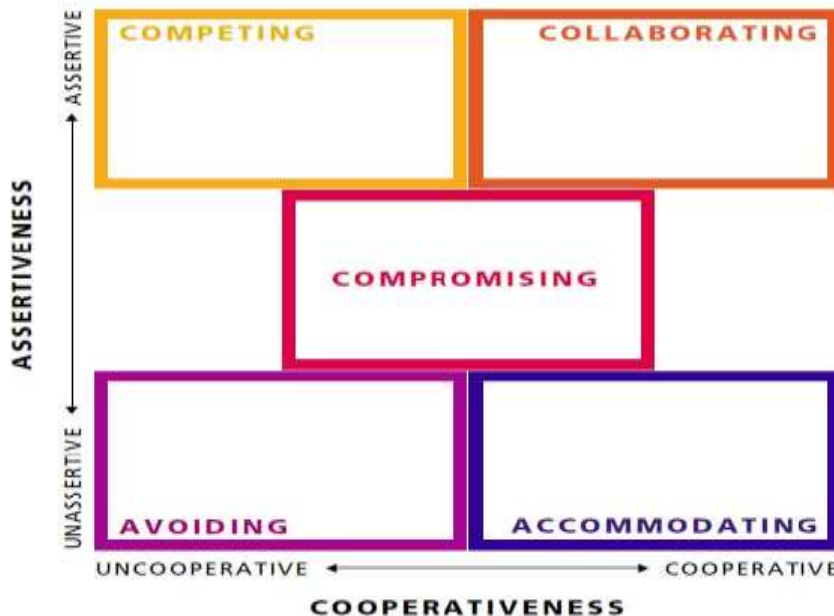


Figure 1: The Five Conflict Management Styles, from Thomas & Kilmann (1974)



Prieto-Remon et al. (2015) found that project managers mostly adopt confronting and compromising styles as first options, under the influence (guise?) of responsibility. Jordan & Troth (2002) observed, however, that individuals with high emotional intelligence consistently preferred to seek collaborative solutions when confronted with conflict.

Ohlendorf (2011) states that project managers may also act as mediators, who aim to assist the parties to find a solution that honours both their interests or at least does not violate their needs. Project managers can help team members find a solution to their dispute and one that is in alignment with the project's scope and needs.

Thiel et al. (2015,2017) found that teams with high initial relationship conflict have worse interpersonal functioning and coordinate less, over the project lifespan. However, teams gradually "rebound" if members tend towards objectively reappraising past affective events and overcame relationship conflict. Changes in perceived threat drive these effects. Sherf & Shapiro (2013) distinguish between

"surfacing" and "discussing" relationship conflict, noting that their effects depend on whether surfacing relationship conflict had yielded relationship repair. The repair was likely to happen if discussions were "accommodating" (refraining from contentious exchanges, despite real or perceived threats). Von Glinow et al. (2004) found that language challenges in multicultural teams can increase the likelihood of emotional conflict and the difficulty of "finding words" in emotional situations. It is questionable whether team members embroiled in emotional conflict should discuss feelings to repair relationships since such members may not share the same meanings. Roschuni et al. (2009) found that high-performing teams with low conflict use high levels of feeling communications. High-conflict teams suppress such communication with feedback. DeChurch et al. (2017) found that conflict processes impact 13% of the variance in both team performance and satisfaction. Thus, how teams interact regarding their differences are crucial.

Table 6. Summary of conflict style/behaviours & team processes, positive & negative

Positive conflict behaviours	Negative conflict behaviours	Context elements if any
-integrating/collaborating conflict management styles -avoiding responses -accommodation and collaboration - deep concern for others rather than no concern - high emotional intelligence and pro-social behaviour - neutral third-party mediation - objectively reappraising past affective events - "surfacing" and "discussing" relationship conflict -focusing on the content of personal interactions rather than style -high levels of feeling communications in messages -cooperative conflict management -negotiation and interest-based conflict resolution	-compromising style -collaborating and contending (competing?) responses -assertiveness more than cooperativeness -an aggressive, confrontational or domineering tactic -confronting and compromising styles - the difficulty of "finding words"	Teams performing complex, non-routine tasks Collectivist rather than individualistic culture Project manager behaviours Changes in the perceived threat of early relationship conflict. Style similar to "accommodation." Members embroiled in emotional conflict High-performance groups High performing low-conflict teams Perceived norms and high volitional control Conflict processes impact 13% of the variance in team performance & satisfaction

5.6 The All-Pervading Role of Trust

Conflict in the presence of trust can be beneficial, whereas the absence of trust is almost always deleterious. This gives rise to the question of how teams can increase trust, a psychological state that cannot be either imposed or assumed to exist a priori. Peterson & Ferguson (2014) suggest that at certain junctures in a project trust and constructive conflict can be encouraged.

5.7 Formal Models of Team Conflict Resolution

5.7.1 The Project Management Institute

PMI's "A Guide to the Project Management Body of Knowledge" or PMBOK Guide, 5th ed. (2013) states the following on page 283 (reproduced in full because of its importance):

Figure 2: Conflict resolution techniques in PMI's PMBOK Guide, 5th ed.

5.7.2 Appropriate/Inappropriate Styles

Building on previous work of similar nature, Spaho [88] proposed a detailed table, elaborating situations in which particular conflict management styles may or may not be suitable.

5.7.3 Team Mediation System

Katz & McNulty (2017) believe that conflict resolution is a communication process for managing conflict and negotiating solutions. This involves defusing any strong emotions and "enabling the disputing parties to understand their differences and similarities". Negotiation is intrinsic to the process, enabling the parties to achieve agreement regarding their interests.

Littlejohn & Domenici (2000) report that a systemic "team mediation system" is used by companies like Advanced Micro Devices using a communication process of confront - listen - acknowledge - respond - commit, based on five characteristics of constructive conflict management - collaboration, power/process/face management and safe environment.

5.7.4 Alternative Dispute Resolution

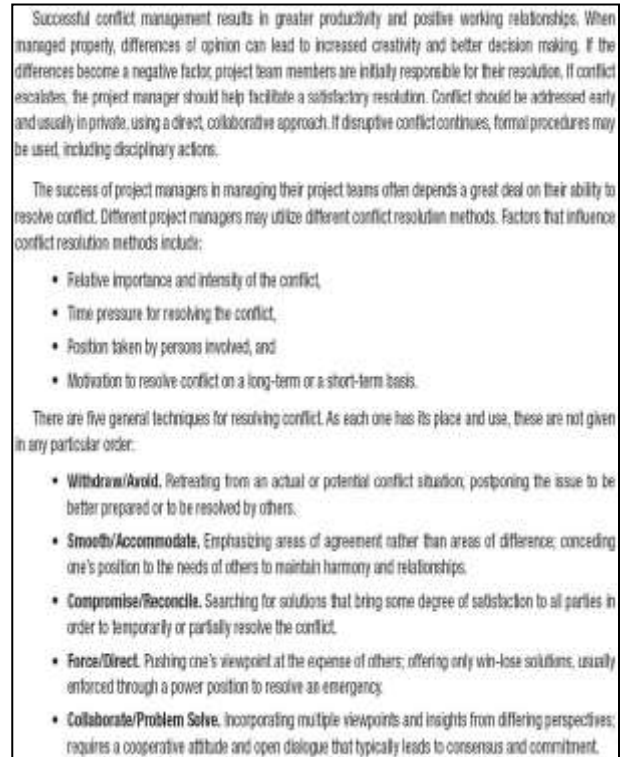
McAlear (2012) proposed an ADR model of project conflict resolution, including techniques of facilitation, negotiation, mediation and an ombudsman, linked to the level of conflict intensity in 5 stages: differences, misunderstandings, disagreements, discord and polarisation.

5.7.5 Integrated Conflict Management System

In the USA, where conflict-related costs of employee litigation are high, an ICMS approach has been adopted by companies like Kellogg Brown & Root as per Lipsky & Seeber (2004), with the following elements:

- ensure conflicts are resolved earliest at the lowest organisational level
- emphasise dispute prevention, through interest-based negotiation and problem-solving
- a robust ADR program to efficiently resolve disputes that are not prevented
- organisational behaviour engendering mutual respect and trust

- training & rewards ensuring employees have necessary skills
- conflict competency as an element of the leadership skill set - "leaders set the tone."



5.7.6 Conflict Dynamics Profile

This approach developed by the Center for Conflict Dynamics at Eckerd College in Florida (2001) focuses on conflict behaviours, rather than styles or personality. It tests individuals and teams for constructive & destructive responses and determines hot buttons to control, helping individuals and teams understand their conflict behaviours and triggers, and how to manage them. The system provides tools to grow necessary behaviours & skills, not relying on styles.

5.8 Discussion and Implications

The devastating negative consequences of relationship conflict on team processes and output are evident from Table 2, underlining its importance for improving project performance. Contributory factors are low team relational closeness, emotion management, communication, trust and workload sharing, besides large team size. In contrast, task conflict is shown to have a beneficial effect on team processes and output.

The interdependence of task and relationship conflict in Table 3 indicates the necessity of isolating them if we are to minimise the negative impacts of relationship conflict while preserving the benefits of task conflict. Favourable conditions for this are identified as mutual trust, cooperation rather than competition or avoidance, team learning not performance orientation, agreement-seeking not emotional behaviour, and closeness or co-location, not dispersion.



Table 4 indicates that members' given diversity and personality composition predispose teams to relationship conflict, also suggesting that team orientation and team process can help overcome this. The age-old paradigm "behaviour is a function of personality & environment" is currently restated as "context (i.e. situation) trumps personality" according to Pellerin (2009). Thus, the second set of contextual factors - psychological safety and behavioural integration reduce relationship conflict. One needs to be aware of, and control for, such antecedent factors while studying relationship conflict.

Appropriate leadership is often regarded as a panacea for various organisational ills. However, as indicated in Table 5, the sensitive nature of relationship conflict renders transformational or proactive leadership negative, and avoidant or pragmatic leadership positive - by appearing to do justice, restore trust or wellbeing and ensuring higher commitment. This has an interesting parallel with the Prince2 and Agile approaches to Project Management which highlight people management and "servant leadership" as key competencies - away from "command and control" to people, behaviour, visioning, autonomy, motivation, influencing & culture awareness.

Table 6 summarises previous sections on conflict styles/behaviour and processes in order to identify both negative and positive triggers, which exacerbate or ameliorate conflict. Compromising and competing styles are seen to have a negative influence, as do assertive, aggressive, confrontational and domineering tactics, besides difficulties in communication. Conversely, collaborating and accommodating styles reduce conflict, as do behaviours reflecting deep concern for others, pro-social emotional intelligence, processes like reappraising past conflicts, negotiation or third-party mediation.

It appears that the PMBOK recommendations fall short of requirements for lasting conflict resolution. By asking project managers and team members to switch between different styles, which are characteristic of personality type, impractical or unrealistic expectations may be set which are unlikely to result in win-win resolutions. Similar comments apply to Spaho's appropriate/inappropriate bifurcation of styles.

Littlejohn & Domenici emphasise communication to resolve team conflict and institute a process embracing collaboration and other features, successfully applied by industry. McAleer's proposal of 4-stage ADR linked to the intensity/stage of conflict is exciting, but different from current approaches which recommend that team conflict be "nipped in the bud" as close to inception as possible, it also has no record of application in industry.

ICMS or integrated conflict management system must be regarded as the "Gold Standard" since it incorporates all three elements necessary to make a success of such initiatives:

- Management support and leadership
- Detailed system and process to be followed
- Personnel training and incentives for performance

CDP or conflict dynamics profile is significant in addressing resolution where the conflict begins - behaviour, being more controllable & changeable than style or personality, with good tools. Successful team conflict

resolution, and the models/methods used, rely on learning & practice by professionals and organisations, as stated by Coleman & Prywes (2014), just like Agile.

VI. RESEARCH GAPS

The paucity of studies on conflict behaviour in project teams is striking; the most focus is on antecedent or "structural" factors, which usually cannot be changed during a project. Conflict behaviour in project teams appears to be not readily amenable to control, with rational leadership approaches, and may be worthy of detailed study using appropriate methods.

A granular approach, with focus on controllable behaviours in the team and organisation, may yield conclusions which serve to mitigate a leading problem and improve productivity.

VII. RESEARCH AGENDA

The study aims to investigate the occurrence and subsidence of relationship conflict and reasons therefor, in a representative sample of infrastructure projects in India. The results may be of benefit to project-based personnel and organisations by developing a more effective "pedagogy" to be learnt/practised, for handling team relationship conflict.

7.1 Central Question

How can we better understand relationship conflict behaviour in project teams of infrastructure projects in India? (As a means to facilitating improved resolution/management). The proposed sub-questions and the research objectives are detailed below:

Proposed Sub-Questions	Research Objectives
What measures of relationship conflict in project teams are available? Are they reliable and valid? How useful would a measure of “social risk” be?	To review the literature and construct suitable measures, including new ones if needed, of RC in project teams.
What are the various manifestations of conflict behaviour in individual/team settings? Which behaviours trigger/increase, and which help to resolve/decrease, relationship conflict?	To identify behaviours responsible for the improved/impaired efficiency of project meetings. To examine the communication patterns among team members.
How frequent and pervasive is relationship conflict in such project teams?	To assess the occurrence and severity of relationship conflicts.
What are the likely impacts of such conflicts on the performance of projects?	To identify the impacts and estimate the consequences on the performance of projects.
What are the predominant conflict management styles/practices adopted? How effective are they? Is there a link between conflict type/reason or severity and effective resolution/management practices?	To identify and rank the resolution behaviours currently practised in the industry. To compare different occurrences of relationship conflict, in their need for different resolution approaches. To construct and validate a relationship between RC types and successful resolution practices.
How does the context of infrastructure projects in India affect, and is affected by, behavioural conflict?	To classify projects with different type/ client/ contract/ other contexts and differentiate conflict behaviours, if any.
What are the training/skilling methods currently used for relationship conflicts? How effective are they?	To identify and prioritise the training/skilling needed for relationship conflict resolution in project teams.
Have any formal tools of conflict resolution/management been deployed? How effective are they?	To assess the needs for internal/external conflict resolution support/services and their timing.

VIII. SCOPE AND LIMITATIONS

A class of physical projects is selected, which involves activities of engineering and construction (E&C) companies building infrastructure, such as transportation, oil & gas facilities, power plants, in the Indian context. It excludes other types of projects such as software development, R&D or product development, which operate in different contexts.

IX. PROPOSED METHODOLOGY, TOOLS AND TECHNIQUES

The research will be mainly **qualitative** - since we are assessing feelings, opinions, behaviours and practices of project personnel in the target population. An “explanatory synthesis” mixed-method technique is proposed, in two stages:

Quantitative (measurement)	Qualitative (assessment)
- incidence or prevalence survey (thro’ questionnaires)	- semi-structured interviews (with selected respondents)
- descriptive/inferential statistics (using SPSS)	- coding & thematic analysis (using NVivo/ATLAS.ti if needed)

Figure 2: 2-stage methodology proposed to be adopted

The survey will rely on the Critical Incident Technique - ask participants to recount an episode of relationship conflict that they experienced/witnessed between team members.

Respondents will be asked to identify behaviours leading to its occurrence and resolution/continuance - including what

led to it, what action took place, and what were the consequences. Both Likert-scale items and open-ended questions are proposed, replies to the former will be statistically analysed. Content analysis will be carried out of the survey text answers and interview results, to identify themes. The target population will be Project Managers +/- one level in infrastructure-building organisations in India, estimated as 100,000 persons. **Purposive sampling** will be used to select a representative sample, including the cohorts involved. A survey sample of about 400 qualified respondents is envisaged to maintain the necessary accuracy. Selected 40-50 respondents will be interviewed, to detail/clarify their responses and views.

Conf. Level ->	95%	90%
Error Margin 5%	384	269
Error Margin 10%	96	68

Figure 3: Sample size requirements

X. ACKNOWLEDGEMENTS

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XI. REFERENCES

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