A special breed of transformational leadership? Integrating conflict management and ethnicity into team coordination in multicultural temporary environments

Abstract

Conflict is common during group activities, and how leaders deal with team members and the conflicts that arise in a project team environment can significantly affect team coordination. This study explores how conflict is dealt with by providing empirical evidence of relationships between transformational leadership style, conflict management styles and the ethnicity of leaders in multicultural project environments in the construction industry. The research extends conflict management style into the transformational leadership behaviour of team leaders to identify their effects on team coordination. Moreover, it evaluates how the ethnicity of leaders can moderate the relationships. This contribution is exceptional for bringing three moderating ethnic groups while drawing on data from 126 teams in the construction industry, using PLS path modelling to test our hypotheses. The results demonstrate that cooperative and conflict-avoiding management styles are positively related to team coordination. The judicious and considered use of the conflict-avoiding management style, in particular, should be recognised as an appropriate solution in certain multi-cultural team contexts by transformational leaders. Teams also exhibited stronger coordination when the team leader was nominated from a specific ethnic group. Possible directions in which future research can be structured are also outlined.

Keywords

Conflict management; transformational leadership; team coordination; construction industry.

1.0 Introduction

Conflict is a typical feature of group activities and often occurs when humans interact in organisations (c.f. Tjosvold, 2008; Humphrey et al., 2017; Driskell et al., 2018; Kenny et al., 2020). The extant literature indicates that conflict is not always detrimental to team coordination and, if handled in a certain way, can be highly constructive in some team environments (Delias et al., 2011; Tabassi et al., 2019). Ding et al. (2017) suggested that as leadership involves focusing the endeavours of a group of individuals towards a common goal and empowering them to work as a team, effectively handling conflict among team members is a key leadership role of project managers. Appropriate leadership styles, however, continue to be the focus of the literature in the twenty-first century because the way team leaders handle conflict can significantly affect team cohesion (Tjosvold, 2008; Lee et al., 2018; Liu et al., 2021). As business environments become more dynamic, uncertain, and complex, interest in the use of adaptive leadership styles has grown (c.f. Müller et al., 2012; McClean and Collins, 2019), and according to DuBrin (2012), reflects its perceived applicability to delivering organisational growth in supporting individuals to achieve goals. However, there are still knowledge gaps regarding the most appropriate leadership styles for different organisational situations, such as managing engineering projects (c.f. Cai et al., 2017; Gils et al., 2018; Tabassi et al., 2019) and project-based organizations. A key question is often which styles work best to facilitate effective relationships between leaders and subordinates to meet shared objectives (Khan et al., 2020). The literature suggests that a transformational leadership style is appropriate in project contexts, as transformational leaders galvanise subordinates to go beyond the status quo to advance innovation and agility in team environments (Avolio et al., 1999; Northouse, 2011; Daft 2014), which is essential for temporary organizations (Barreto et al., 2022). Although the concept of leadership has been acknowledged to be among the key success factors for enhanced team effectiveness,

limited empirical research focuses on the relationships between the transformational leadership behaviour of team leaders, their conflict-handling style, and team coordination in project-based environments (Kissi et al., 2013; Müller et al., 2012; Tabassi et al., 2017) exclusively under one comprehensive model. Therefore, to address the knowledge gap, we investigate the relationships between the transformational leadership behaviours of project team leaders, their approaches to conflict management style and team coordination. We adopt an integrative theoretical approach that fuses conflict management and transformational leadership concepts in the context of engineering project-based organisations in the construction industry. In doing so, we also build upon earlier work in relation to the effect of culture on team management, specifically the findings of Fisher (1990) that the negative consequences of conflict are more likely to occur when cultural differences are present among team members. This means that different cultures may require different methods of handling conflict to maximise the coordination of project teams (Vallas et al., 2022). Further research on conflict management in temporary teams that experienced task interdependence, such as construction management teams, and relied on team members to attain a solid result has also been encouraged by Beck et al. (2022), Upadhyay (2021) and Rispens et al. (2021). We take the construction industry as our empirical study because of the recognised challenges associated with cross-cultural management in the industry (Guo et al., 2021). Furthermore, we focus on construction project teams in Malaysia, as they are typically multicultural, comprising three main ethnicities: Malays, Chinese and Indians. Among Malaysian citizens, Malays or *Bumiputeras* have the highest percentage of the population in the country, with 68.6% of the total, followed by Chinese, 23.4%, Indians, 7.0%, and finally, others (1.0%) (Department of Statistics Malaysia, 2018). We analyse the moderating role of the ethnicity of leaders, as prior studies proposed that it could have this role in the effective management of complex social systems (Love et al., 2008; Chung et al., 2020), which is one

conception of construction project working environments that limited research has been performed around it.

2.0 Leadership in the construction industry

The construction industry is a dynamic and complex work environment involving social interactions (Loosemore et al., 2003). Hence, it is an environment with various sources of potential conflict, resulting in managerial apprehension and challenges to effective leadership (Fellows et al., 2002; Zerjav et al., 2018). This situation has led to a call for competent leadership practices among project managers, as they focus on managing their teams through the construction lifecycle (Fellows et al., 2002).

In the construction industry, communication, handling conflict and managing interpersonal relationships are among the major leadership challenges for ensuring effective teamwork (Toor and Ofori, 2008). The focus on relationships was further stressed by Nixon et al. (2012) in that the way individuals interact with each other is one of the critical elements of the leadership process in the construction industry. Therefore, leadership is conceptualised as a supportive course of action influencing the team's ability to accomplish goals (Yang et al., 2011). Adopting a relevant leadership style has been observed to positively influence individual performance (Gils et al., 2018), resulting in the smooth running of construction activities (Naoum, 2011; Yang et al., 2011). Hence, enhanced knowledge of appropriate leadership styles in the construction industry, for example, through a better understanding of the concept of leadership, interpersonal conflict management and team coordination, is a potentially fruitful path to understanding what drives effective project teams in complex environments in which these projects are undertaken. In addition, the dynamic environment of the construction industry elevates uncertainties within the various phases of the lifecycle of projects and results in group contexts characterised by pressure, stress, conflict, and risk (Lee,

2010; Brown et al., 2020). Team members in these dynamic work environments are considered particularly responsive to the transformational and charismatic behaviours of team leaders (Jansen et al., 2009). Relying on the findings of Clercq and Belausteguigoitia (2017) and Kammerhoff et al. (2019), transformational leadership will be most effective during a conflict because conflict situations trigger individual anger, fear, hurt and frustration, which are stimulated by the perceptions that transformational behaviours offer to individuals and teams. Transformational leaders are also more able to properly recognise the emotions of team members (Jansen et al., 2009; Kammerhoff et al., 2019), which is extremely helpful when team members experience conflict.

The preceding literature has also suggested a positive influence of transformational leadership on team coordination (Zhang et al., 2011). Building on these prior findings, we formulate the following hypothesis:

Hypothesis 1: A positive relationship holds between the transformational leadership style of a project team leader and the level of team coordination.

3.0 Conflict-handling styles

Pressure to come to an agreement (Parry et al., 2008), power differences (Zartman and Touval, 1985), the complexity of the organisation's tasks and interdependence of the units (Lawrence and Lorsch, 1986; Humphrey et al., 2017), and culture and leadership styles (Kozan, 1989; Tinsley and Brett, 2001) all affect the way conflict is managed. It is well established that conflicts directly impact team coordination (Humphrey et al., 2017), particularly in the temporary organisations formed to undertake projects in the construction industry (Wu et al., 2017). Poor project outcomes due to conflict typically relate to two major issues that generally result in destructive conflict. First, technical conflicts are rooted in the different viewpoints of designers and contractors or designers and clients (Chen et al., 2014).

Second, relational conflicts among team members are due to distrust or different personal behaviours (Tjosvold, 2008). These conflicts between team members are attenuated because of the relational complexities of multidisciplinary teams coming together to work on projects. Conflict can be detrimental to performance but beneficial when controlled at a manageable level. Therefore, conflict behaviours need to be at an optimum level rather than being totally ignored (Leung et al., 2014). Conflict resolution can enhance work steadiness, promote feelings of self-efficacy among team members, minimise the likelihood of negative conflicts in future works (Mitchell et al., 2015) and contribute to a company's long-term financial growth (Rubin et al., 1994).

Conflict-handling styles have been outlined as different strategies used by individuals when interacting with others in contrary interpersonal or business instances (Tinsley and Brett, 2001; Kleinman et al., 2003). Over time, various theories on the efficacy of different styles of addressing interpersonal conflict have been proposed (see, for example, Blake & Mouton, 1964; Rubin et al., 1994; Rahim & Magner, 1995; Kleinman et al., 2003). Blake and Mouton's (1964) pioneering work proposed a grid to classify methods for handling interpersonal conflicts into five styles: "forcing", "withdrawing", "smoothing", "compromising", and "confrontation." They grouped the five styles around two dimensions, which are associated with the behaviour of team leaders: 1) concern for people and 2) concern for tasks. Recent extant literature, i.e., Tjosvold et al. (2014) and Kay and Skarlicki (2020) show that the dual concern model presented by Blake & Mouton is still a widely used taxonomy of conflict management in research studies. Thomas (1976) (cited in Rahim & Magner, 1995) re-evaluated Blake and Mouton's conflict-handling styles in the context of group settings. He placed five styles of handling conflict in two main dimensions: "cooperativeness", in which more attention is given to peers' concerns, and "assertiveness", where personal concerns are more important. Based on the amount of focus that an individual

gives to meeting self-concerns and the effort that person expends to fulfil the concerns of peers, five distinct conflict-handling styles are derived: “cooperative”, “competitive”, “accommodating”, “avoiding” and “compromising” (Rahim & Magner, 1995).

The dynamic and complex nature of construction projects, as well as the high rate of changing requirements of construction activities, will ask construction organisations to benefit from effective conflict management styles (Tabassi et al., 2016). In this respect, a prior study (Tabassi et al., 2019) suggested that approaches classed as “cooperative” and “avoiding” could potentially result in enhanced effectiveness in teamwork settings.

3.1 Cooperative approaches to conflict

Team leaders can develop a cooperative conflict resolution strategy by concentrating on teams’ shared pursuits. They need to demonstrate that they are seeking mutual benefits, interested in everyone's viewpoint, and looking to integrate different suggestions to set up practical solutions. This strategy can result in better team coordination (Deutsch, 1990; Tjosvold, 1985; Lee et al., 2018). Managing conflict in a cooperative context is characterised by precise and open communications, responsiveness, common understanding, and the development of mutually favourable alternatives (Sanders and Schyns, 2006; Ayoko, 2016). We extend previous research by focusing on the specific context of the multicultural project team environment. Furthermore, we posit that a cooperative conflict management strategy has a role in mediating between transformational leadership and team coordination. This assertion leads to the next two hypotheses.

Hypothesis 2: A positive relationship holds between cooperative conflict management and the level of team coordination.

Hypothesis 3: Cooperative conflict management mediates the positive relationship between transformational leadership style and team coordination.

3.2 Avoiding approaches to conflict

A conflict-avoiding resolution style is a way individuals attempt to quickly smooth over conflicts with minimal dialogue, as opposed to openness or the cooperative conflict management style that promotes direct discussion. When following avoiding strategies, people do not openly discuss the topic of conflict. Avoiding is characterised by low concern for the self and others, and it identifies those actions that will result in minimal face-to-face contact, by either ignoring the cause of the conflict or by changing the topic to a new subject. This particular conflict management style has been categorised as buck-passing, disengagement, or sidestepping (Rahim, 2002). Cultural context influences the use of this style. For instance, Tjosvold (2008), Tjosvold et al. (2001) and Uchida (2021) describe how East Asian collectivist cultures have a tendency towards interdependence and acknowledge that individuals depend upon one another. As a result, some leaders may select a conflict-avoiding management style because they see it as an approach that maintains harmonious relationships with subordinates and peers. We explore this notion further by exploring whether this conflict management style influences team coordination in a positive way. We also posit that conflict-avoiding management strategies have a role in mediating between transformational leadership and team coordination. Hence, our next two hypotheses are as follows:

Hypothesis 4: A positive relationship holds between conflict-avoiding management and the level of team coordination.

Hypothesis 5: Conflict-avoiding management mediates a positive relationship between transformational leadership style and team coordination.

4.0 Team coordination and ethnicity

Group and organisational literature regard team coordination as a key element of effectiveness (Gittell, 2002; Hoegl & Gemuenden, 2001). Consistent with this evaluation,

Malone and Crowston (1994) conceived team coordination as the additional work performed so that the team members achieved their common goals, other than the activities they undertake as individuals. To work with each other productively, team members' efforts need harmonising. Coordination involves this harmonisation, in part, through orchestrating the relationships between team members. It also involves arranging interdependent activities, for example, assigning tasks to each member, managing work in progress, and outlining methods and standard procedures for performing activities (Yukl, 2006). Likewise, team coordination is an obligatory practice for groups to share necessary information and align team members' actions with project objectives (Marks et al., 2001; Tuncdogan et al., 2017). In a "shared" or "team" coordination model (Cooke et al., 2000), individual team members overlap or complement each other in terms of knowledge and task content and accuracy. Hence, shared coordination models enable team members to describe, explain, and predict each other's behaviours. A shared model facilitates the ability of team members to coordinate activities, which is directly related to team effectiveness.

We posit that any methods and strategies, including leadership style and conflict management strategies established as a means to strengthen teamwork actions, ought to have a positive impact on team coordination.

According to the leadership literature, issues related to ethnicity have been observed as creating barriers to effective team performance. In that sense, many studies implicitly and occasionally explicitly remark on the significance of the cultural background of leaders in terms of the effectiveness of managing teams (Knight et al., 2003; Rosette et al., 2008; Collins, 2005; Richardson and Loubier, 2008; Chung et al., 2020). They suggest that the ethnicity of leaders may influence their leadership style and the way they deal with conflict in organisations. Hence, our final hypothesis is as follows:

Hypothesis 6: The ethnicity of team leaders moderates the positive relationship between the conflict management style of project team leaders and team coordination.

5.0 Conceptual model

Previous studies on conflict management show that conflict is a ubiquitous characteristic of teamwork and inherent to interactions among team members. Some studies focus on how a team manages conflicts and leaders adopt different styles to enhance team coordination (Tjosvold, 2008; Wu et al., 2017). In project-intensive organisations, coordination activities have a bearing on the productiveness of teams (Mitropoulos and Cupido, 2009). Despite these findings, there is still limited research on the interplay and nuances of the relationships between the conflict management style of leaders, transformational leadership approaches and team coordination activities, particularly in complex project-intensive sectors, such as construction, where teamwork is typically characterised by high levels of complexity and uncertainty and, in some cases, involves individuals from different cultures. Alternatively, the literature clearly shows that the dynamic and fast-changing project, organisation and skill requirements of the industry may sometimes require an intricate set of leadership phenomena (Tabassi et al., 2016). Because of this fact, team leaders apparently need to obtain relevant leadership styles to enhance teamwork accomplishments (Marques-Quinteiro et al., 2022). Although Jansen et al. (2009) suggested that team members from dynamic work conditions are more open to transformational and charismatic behaviours of leaders, other features of leadership, such as those presented by servant leadership, may sway the individuals. As conceptualised by Chen et al. (2016), servant leadership has several dimensions, including emotional healing, creating value for the community, problem-solving abilities, empowering subordinates, helping subordinates grow and succeed, putting subordinates first, and behaving ethically. Most dimensions of servant leadership, however, address the way a leader

goes beyond self-interest to support and develop followers. Notably, in servant leadership, the focus is on supporting and developing the individuals within the team environment, while transformational leadership centres on the strategies connected with motivating employees to work towards a common goal at the team level. Since we stress on greater team coordination in this study, the concept of transformational leadership has been outlined and evaluated in the conceptual model. The conceptual model presented in Figure 1 illustrates the interplay and relationships, as yet unexplored, that form the scope of our study. Our research will enhance the understanding of how specific conflict management styles contribute to the effective coordinating of teams in specific situations.

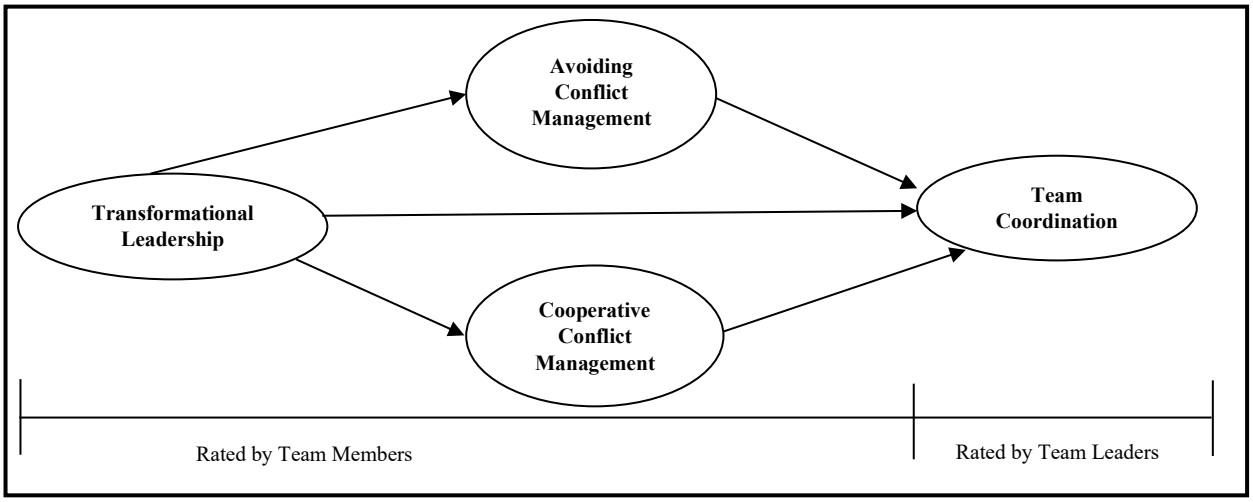


Figure 1- Hypothesised Model

6.0 Research method

The hypothesised model in Figure 1 is evaluated by collecting data from two groups of participants: project team members and team leaders. This data collection technique was adopted to minimise the risk of common method variance (CMV) and to ensure the validity of research outcomes (Zhang et al., 2011). Team members rated five types of conflict management styles exhibited by project team leaders, including cooperative, competitive, accommodating, avoiding and compromising, as well as their leaders' transformational

leadership styles. The team leaders evaluated their team coordination. We used the procedures provided by Richardson and Loubier (2008) to confirm that the data were coherent and that no issues were associated with these data being collected from two sources. Two different survey questionnaires were distributed among the respondents. The questionnaires measured the degree of importance, on a Likert scale, of five ordinal measures. The team member questionnaire comprised three sections and evaluated the respondents' background, the team leader's transformational leadership style, adopted from the "Multifactor Leadership Questionnaire" (MLQ) developed by Bass and Avolio (1997) and Avolio et al. (1999), and the conflict management style of team leaders, adopted from Northouse (2011). The MLQ was used in this research as a well-known instrument for measuring the leadership style of leaders, which is considered "the best-validated measure of transformational leadership," (Ozaralli, 2003: p. 338). The twenty questions adopted from the MLQ measure transformational leadership style in four broad areas: individualised consideration (IC), idealised attributes (IA) (charisma), inspirational motivation (IM), and intellectual stimulation (IS). Following established protocols, these four individual components, which typically exhibit high intercorrelations (Yukl, 2006; Fu et al., 2010), were joined to form one second-order construct (Tabassi et al., 2014). Five styles of the conflict-handling questionnaire designed by Northouse (2011) that fall within a scale of assertiveness and cooperativeness were adopted to evaluate leader conflict management behaviour. The styles include cooperative, avoiding, accommodating, compromising and competitive. The team members were requested to evaluate the conflict management style of the leaders on a 5-point Likert scale (1 = "Never" to 5= "Always").

The team leader questionnaire comprised two parts and evaluated the general background and team coordination capability of team leaders; the latter part used pre-validated measurement instruments of Hackman (1983), Zhang et al. (2011) and De Dreu (2007).

6.1 Sampling

Over 800 large construction companies in Malaysia were targeted, and letters were sent out by post and email inviting them to participate in this study. We also sent three follow-up e-mails, telephone calls and research assistants who also visited company HR divisions to communicate our research and seek their participation in the study. By the end of six months, 84 companies agreed to participate in the research. This resulted in a sample comprising 378 individual team members from 126 construction project teams working in 84 companies and their corresponding 126 team leaders in each organisation. We used purposive sampling when selecting the sample of projects to maximise their ethnic diversity in team composition. The research officers visited the respondent's organisations in different regional areas in the capital cities of Malaysia to deliver the two sets of questionnaires to the relevant individuals. We nominated random three individuals from each team to evaluate the transformational leadership style of the team leader/director and their conflict management style to minimise possible bias in the data analysis.

The minimum sample size was tested, and a reactive Monte Carlo analysis was performed (Chin, 1998). As a result, the final sample size of 126 exceeded the recommended minimum number of 89, deemed adequate for PLS-PM model evaluation (Hair et al., 2014). The power analysis method and G* Power software were also applied to verify the sample size. The minimum sample size required to attain the 75% coefficient of determination at a 95% confidence level for this study was calculated as n=89. Having 126 teams from 84 companies were deemed acceptable given the novelty of the topic. Even so, response rates as low as 10–12% are not atypical in construction management research (Chileshe et al., 2018). The size of the investigated teams ranged from 5 to more than 20 members, with an average of 6-10 (SD = 1.47), who was in performing or adjourning phases. A total of 61.9% of the team leaders were male, and 66.7% had at least 6 years of experience in the construction industry. The

different ethnicities among team leaders revealed that Chinese (43.6%) represented the highest proportion, followed by Malay (28.6%), Indian (27%) and other ethnicities (0.8%). In terms of educational level, 77.8% of leaders possessed a bachelor's degree or higher, and the remainder had graduated from junior colleges.

7.0 Data analysis

We selected Smart PLS to evaluate the variables of the hierarchical hypothesised model (Figure 1). PLS path modelling (PLS-PM) has generally been used with a path-weighting structure for inside approximation (Chin, 2010). Therefore, nonparametric bootstrapping was applied with 500 replications to achieve the standard estimate errors (Chin, 2010). As advised by Wold (1985), the method of repeated indicators was implemented to evaluate the higher-order latent variables.

7.1 Assessment of Transformational Leadership style

The transformational leadership style of leaders was measured by aggregating team member evaluations of the leaders, following the guidelines set out in previous related studies (Yammarino and Dansereau, 2008; Zhang et al., 2011). We used the method of aggregation introduced by James et al. (1984) where the measurements of multi-item $r_{WG(J)}$ are calculated with Eq. 1:

$$r_{WG(J)} = \frac{J\times\left(1-\frac{S_k^2}{\sigma_{EU}^2}\right)}{1+(J-1)\times\left(1-\frac{S_k^2}{\sigma_{EU}^2}\right)} \qquad \text{Eq. 1}$$

The $r_{WG(J)}$ index gives the Spearman-Brown prophecy formula to incorporate the total number of measured items in the within-group agreement computation. Hence, J is the total number of measured items, and S_k^2 is the average variance of the J items in a cluster of k evaluators. Our calculation shows that the value of $r_{WG(J)}$ is 0.932 for transformational leadership. Although some controversy related to the 'cut-off' value of r_{WG} exists in the

literature (Lance et al., 2006), the value of 0.932 is in excess of the commonly agreed minimum value of 0.70.

7.2 Conflict Management Styles

Since the team shaped the unit of analysis of the research and the data on conflict management styles were obtained from individuals, the data were aggregated. Similar to measuring the transformational leadership style of leaders, the $r_{WG(J)}$ index for each conflict-handling style was calculated, with the results as follows: cooperative (0.908), avoiding (0.913), accommodating (0.91), compromising (0.908) and competitive (0.899). The estimated values of $r_{WG(J)}$ are greater than the frequently agreed threshold value of 0.70. In addition, the percentage of $r_{WG(J)}$ > 0.70 for the aggregated parameters was 86%. Further analysis showed that no team had a $r_{WG(J)}$ less than 0.50 across the constructs. The research conceptualised the five conflict-handling styles and assessed their relationship with the transformational leadership behaviour of leaders, team coordination, and team performance. The degree of explained variance in the hierarchical model was mirrored in its elements (see Figure 2). Only the path coefficients from cooperative and conflict-avoiding management styles to team coordination were significant at p <0.01 and p<0.1, respectively. However, the CR and AVE of all constructs were above 0.7 and 0.5, respectively, which surpassed the threshold values (Hair et al., 2014).

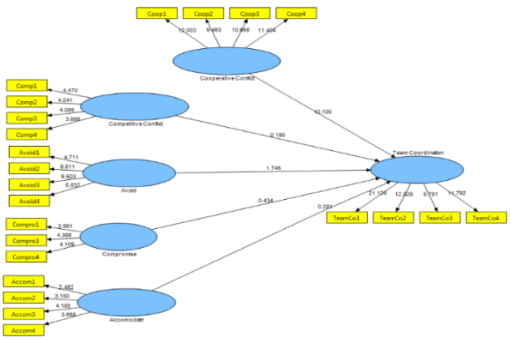


Figure 2- Effects of five conflict management styles on team coordination

7.3 Measurement Model Results

A confirmatory factor analysis (CFA) was performed to determine the constituents of the measurement scales, which was based on Chin (2010) for the evaluation of the reliability and validity, convergence and discriminant nature of the scales (see Tables 1 and 2). The common method variance (CMV) is shown in Table 1. The composite reliability (CR) of the constructs was higher than 0.7 (Gefen et al., 2000), and the average variance extracted (AVE) for all constructs was above 0.5 (Fornell and Larcker, 1981), so CMV is not a concern. In addition, the results show that most item loadings are in excess of 0.7 and significant at 0.01. Based on Table 2, convergent validity was also demonstrated since all indicators loaded on their specific hypothesised construct when compared to other variables (own-construct loading is higher than cross loadings; Chin, 2010). Discriminant validity was assessed based on the Fornell-Larcker criterion. The square root of the AVEs was computed and the correlations were compared with other latent variables. Since the square root of AVE in each construct was higher than its correlation with any other construct in the model, discriminant validity was evidenced (Chin, 2010; Fornell and Larcker, 1981); no correlation greater than 0.9 was found between the constructs (Hair et al., 2014). Overall, the model was suitable for testing the hypotheses and validating the research.

Table 1- Common Method Variance

Constructs	**Items**	**Loading**	**AVE**	**CR**	**R Square**
Avoiding	Avoid1	0.6628	0.5289	0.8175	0.238
	Avoid2	0.7635			
	Avoid3	0.7521			
	Avoid4	0.7264			
Cooperative	Coop1	0.7563	0.5196	0.7859	0.1214
	Coop2	0.6304			
	Coop3	0.6864			
	Coop4	0.6911			
IC	IC1	0.7082	0.6261	0.8929	0
	IC2	0.861			
	IC3	0.7681			
	IC4	0.8344			
	IC5	0.7756			
IA	IA1	0.7335	0.6094	0.8861	0
	IA2	0.7663			
	IA3	0.8196			
	IA4	0.8302			
	IA5	0.7489			

IM	IM1	0.8223	0.676	0.8621	0
	IM2	0.8527			
	IM3	0.7905			
IS	IS1	0.8071	0.5511	0.8293	0
	IS2	0.8121			
	IS3	0.7104			
	IS4	0.6236			
Team Coordination	TeamCo1	0.8018	0.5342	0.7943	0.5094
	TeamCo2	0.6602			
	TeamCo3	0.6008			
	TeamCo4	0.7328			

CR = composite reliability; AVE = average variance extracted

Table 2- Correlations among Constructs

	Avoiding	**Cooperative**	**IC**	**II**	**IM**	**IS**	**Team Coordination**
Avoiding	0.727255113	0	0	0	0	0	0
Cooperative	0.1306	0.720832852	0	0	0	0	0
IC	0.3676	0.1555	0.79126481	0	0	0	0
IA	0.3611	0.1263	0.6139	0.780640762	0	0	0
IM	0.5602	0.084	0.4964	0.6547	0.822192	0	0
IS	0.3256	0.2866	0.5599	0.6335	0.5959	0.742361098	0
Team Coordination	0.3041	0.5539	0.1894	0.0965	0.1332	0.2922	0.730889869

∗Square root of the AVE's on the diagonal

To evaluate the measurement models, internal consistency (CR), indicator reliability, convergent validity (average outer weights variance extracted), and discriminant validity were analysed. To check for multicollinearity of the transformational leadership construct, the variance inflation factor (VIF) was determined. Table 3 shows the tolerance and VIF values for the transformational leadership constructs, with all formative indicators being lower than 5 and their tolerance values higher than 0.2. Hence, no collinearity issues emerge with transformational leadership as a second-order formative construct (Hair et al., 2014).

Table 3- Assessment of multicollinearity for Transformational Leadership as a second-order formative construct

Coefficients

Model		Collinearity Statistics	
		Tolerance	VIF
1	IC	.676	1.480
	IA	.513	1.949
	IM	.577	1.733
	IS	.520	1.921

Although the data collection technique from two sources minimised the risk of CMV as a possible solution for the validity of research outcomes, data coherence was checked to allow

the compatibility of partial conditional assessments. We managed structural zeros that characterised the relevant links among the variables of the study presented in Figure 1. As a result, there is no logical constraint among the variables; hence, the coherence of the conditional assessment is satisfied (Vantaggi, 2008). Thus, the trustworthiness of the results of this study with minimising the risk of CMV and having coherence of the data from two sources has been confirmed.

7.4 Assessment of the Structural Model

Table 4 shows the standardised beta of 0.49 from transformational leadership style to avoiding mode of conflict handling, 0.35 from transformational leadership style to cooperative conflict management, 0.302 from conflict-avoiding management to team coordination, 0.56 from cooperative conflict to team coordination. Hence, H1, H2, and H4 are supported. In addition, the results show that transformational leadership style and conflict-avoiding management style positively relate to team coordination, which is significant at the 0.08 level. As a result, the conflict-avoiding management style showed a partially significant effect on team coordination. The transformational leadership style and cooperative conflict management, however, showed significant influences on team coordination.

Table 4- Total Effects

	Beta Value	**t-value**	**P-value**	**Standard Error**
IC → Transformational Leadership Style	0.2993	4.9134	*******	0.0609
IA → Transformational Leadership Style	0.3233	3.6093	*******	0.0896
IM → Transformational Leadership Style	0.1795	3.0998	*******	0.0579
IS → Transformational Leadership Style	0.3318	5.2604	*******	0.0631
Transformational Leadership Style → Avoiding	0.4879	7.1198	*******	0.0685
Transformational Leadership Style → Cooperative	0.3484	3.1577	*******	0.1103
Transformational Leadership Style → Team Coordination	0.4763	3.748	*******	0.1271
Avoiding → Team Coordination	0.236	1.746	0.08143	0.0775
Cooperative → Team Coordination	0.625	8.0299	*******	0.0798
R^2 Team Coordination 0.665				

7.5 Mediating Effects

In Figures 3a and 3b the mediating influence of conflict management styles on the relationship between transformational leadership style and team coordination is shown. Prior to the analysis, the conditions for mediation were set up as follows (Hair et al., 2014): first, the predictor variable (transformational leadership behaviour of leaders, which was developed as a second-order variable) shows a significant influence on the mediators (avoiding and cooperative conflict management styles); second, the mediators exhibit significant impacts on the dependent variable (team coordination; H2 and H4); and finally, the predictor variable maintains a significant impact on the dependent variable in the absence of the mediator.

To measure the mediating influence of conflict management styles in the model, the indirect influences of a×b must be significant (see Figure 3 a + b). The z-statistics presented by Sobel (1982) were applied and were significant at $p<0.05$. Since the z-values exceed 1.96 ($p<0.05$), H3 and H5 will be approved, which represent the indirect effect from the transformational leadership behaviour of leaders through conflict management style on team coordination results. The z-values are defined as Eq. 2:

$$z = \frac{a \times b}{\sqrt{b^2 \times s_a^2 + a^2 \times s_b^2 + s_a^2 \times s_b^2}} \qquad \text{Eq. 2}$$

$$z_a = \frac{0.348 \times 0.625}{\sqrt{(0.625 \times 0.1103)^2 + (0.348 \times 0.0798)^2 + (0.0798 \times 0.1103)^2}} = 2.91$$

$$z_b = \frac{0.488 \times 0.302}{\sqrt{(0.302 \times 0.0685)^2 + (0.488 \times 0.0775)^2 + (0.0685 \times 0.0775)^2}} = 2.99$$

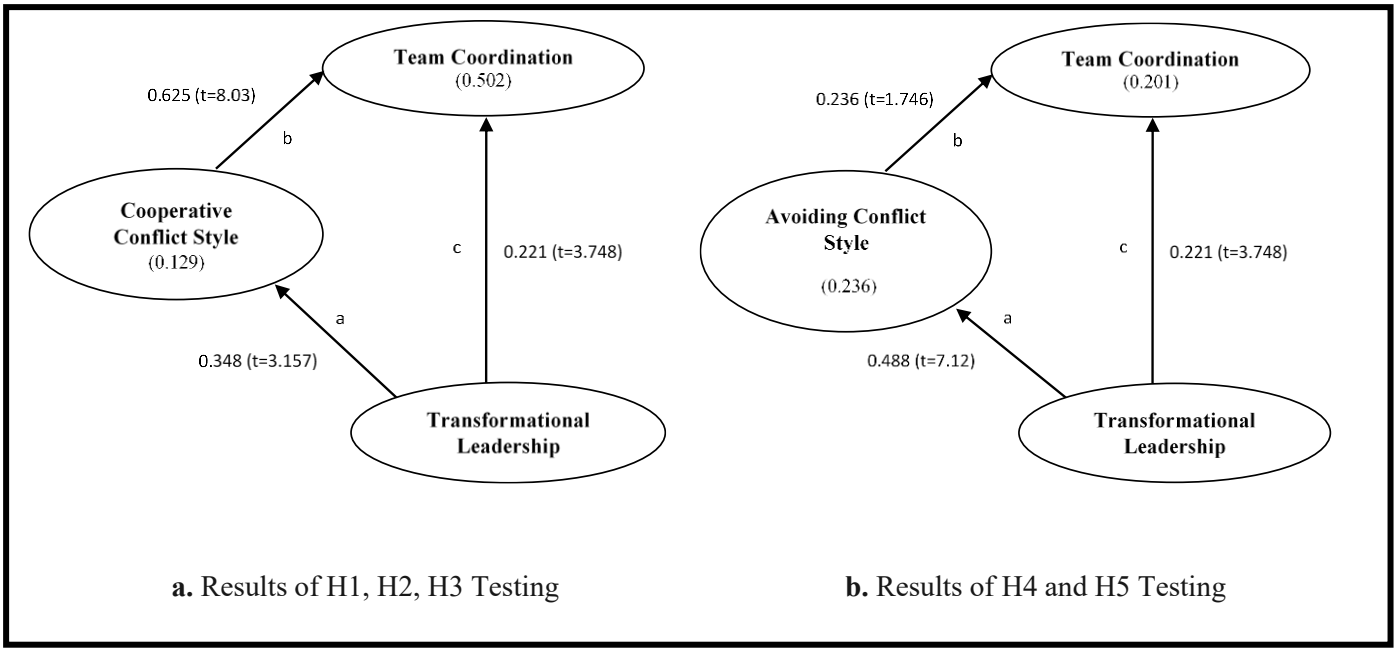
As shown in Figure 3a, transformational leadership has a significant influence on the cooperative conflict management style (0.348, $p<0.01$). In the same way, cooperative conflict management style shows a significant influence on team coordination (0.625, $p<0.01$). Identical methods have been used to examine the mediating role of the avoiding style of

handling conflict, and a significant mediation role of this conflict management style from transformational leadership on team coordination was observed. The z-value was 2.99 ($p<0.05$), which surpassed the threshold of 1.96. To estimate the size of the indirect effect in the model, the variance accounted for (VAF) value was calculated, which signifies the percentage of the indirect impact to the total effect. The VAF value for the first model (Figure 3a) indicates that almost 50% of the total effect of transformational leadership on team coordination is defined by the indirect effect (cooperative conflict management style).

$$VAF_a = \frac{a \times b}{a \times b + c} = \frac{0.348 \times 0.625}{0.348 \times 0.625 + 0.221} = 0.496 \qquad \text{Eq. 3}$$

The VAF value for the subsequent model (Figure 3b) indicates that nearly 34.3% of the total effect of transformational leadership on team coordination is defined by the indirect effect (conflict-avoiding management style).

$$VAF_b = \frac{a \times b}{a \times b + c} = \frac{0.488 \times 0.236}{0.488 \times 0.236 + 0.221} = 0.343 \qquad \text{Eq. 4}$$



a. Results of H1, H2, H3 Testing **b.** Results of H4 and H5 Testing

Figure 3- Results of Hypotheses Testing

7.6 Moderating Effects of Ethnicity

The results of the PLS path model show that all measures fulfil the frequently recommended guidelines for model assessment by Hair et al. (2014). In particular, the analyses per ethnic

group indicate that all items showed CR values above 0.70, and the AVE values were also in excess of 0.50 (Table 5). In addition, the construct discriminant validity tests were performed, and the results support the reliability and convergent validity of the measures.

Table 5- Ethnics-Specific Results

		Chinese	**Malays**	**Indians**
Avoiding	AVE	0.5027	0.6257	0.5991
	CR	0.7035	0.8686	0.7884
Cooperative	AVE	0.5307	0.5122	0.5294
	CR	0.8185	0.7028	0.7482
IC	AVE	0.6758	0.6407	0.5890
	CR	0.9122	0.8966	0.8216
IA	AVE	0.5786	0.6928	0.5933
	CR	0.8716	0.9181	0.8786
IM	AVE	0.6139	0.6000	0.7850
	CR	0.8258	0.8180	0.9162
IS	AVE	0.5901	0.6367	0.5002
	CR	0.8495	0.8746	0.7302
Team Coordination	AVE	0.5203	0.5050	0.5241
	CR	0.8119	0.7240	0.8118
n		55	36	34
Path Relationships				
Avoiding → Team Coordination		-0.0577	0.2797**	0.2911**
Cooperative → Team Coordination		0.5305**	0.499**	0.7771**
Transformational Leadership → Team Coordination		0.5438**	0.6874**	0.2991**
R^2 Team Coordination		0.534	0.665	0.750

CR = composite reliability; AVE = average variance extracted
*significance at 0.05, **significance at 0.01

Table 6 shows the differences in three comparison path coefficient estimates (Chinese vs. Malays, Malays vs. Indians, and Chinese vs. Indians) and presents the results of multigroup comparisons influenced by the parametric method, i.e., Henseler's (2007) approach and the permutation test. The results show the bias-corrected 95% confidence intervals, together with the results of the corresponding multigroup analysis. The ethnicity multigroup analysis indicated that, commonly, the results of multigroup comparison test overlapped very closely. On the other hand, if the parameter estimate for a path relationship of one group (Table 5) fails to slide within the corresponding confidence interval of another group (Table 6) and vice versa, it can be concluded that there is no evident overlap. Hence, we can presume that the group-specific path coefficients are significantly varied on a significance level of α, which are available in the last column in Table 6. Therefore, support is found for H6.

Table 6- Multiple comparison test results

Moderation effects					
Relationship	Comparison	Difference			Significance
		Path	P-Value	t-Value	
Avoiding → Team Coordination	Malay vs. Chinese	0.337	0.001	3.354	Sig.
	Malay vs. Indians	0.011	0.923	0.098	NSig.
	Chinese vs. Indians	0.349	0.004	2.993	Sig.
Cooperative → Team Coordination	Malay vs. Chinese	0.032	0.733	0.289	NSig.
	Malay vs. Indians	0.057	0.583	0.552	NSig.
	Chinese vs. Indians	0.089	0.482	0.706	NSig.
Transformational Leadership → Team Coordination	Malay vs. Chinese	0.144	0.333	0.974	NSig.
	Malay vs. Indians	0.388	0.016	2.482	Sig.
	Chinese vs. Indians	0.245	0.046	2.035	Sig.

Notes: Sig. denotes a significant difference at 0.05; Nsig. denotes a nonsignificant difference at 0.05.

8.0 Discussion

The construction industry comprises complex and dynamic businesses. The nature of management activities undertaken at different stages of a construction project by these businesses means that the likelihood of interpersonal conflict between individuals is high. In response, leaders need to demonstrate skills in conflict management when interacting with team members. In relation to this, the prior literature highlights insufficient empirical findings on how transformational leadership and the conflict-handling style of leaders influence team coordination in dynamic work environments, such as the construction industry (Clercq and Belausteguigoitia, 2017; Kammerhoff, 2019). Hence, the main purpose of our research is to examine the mediating impacts of conflict management style on the transformational leadership behaviour of leaders and team coordination in temporary organizations, which, to date, has not been modelled in its entirety by the extant literature. In addition, we explore the moderating influence of the ethnicity of leaders on the above relationships, which is a further area in which gaps in understanding exist.

We framed conflict management styles of team leaders as hierarchical constructs, with two dimensions (cooperative and avoiding styles) exhibiting a statistically significant impact on team coordination. The results from the conflict-avoiding handling style lend empirical support for previous conceptual-based studies (Ayoko, 2016; Chen et al., 2016; and Tjosvold,

2008) proposing that conflict-avoiding management styles could result in better team performance. Accordingly, the findings of the study showed that in practice, conflict-avoiding management could also positively influence overall team coordination, which is a controversial idea in the extant literature within Western countries (Tinsley and Brett, 2001; Ayoko, 2016; Kay and Skarlicki, 2020). This finding is also a response to the calls of Upadhyay (2021), and Rispens et al. (2021) for further research to explore a deeper understanding of preferences for conflict management styles in temporarily based project groups. This issue will be an area for future research to identify whether conflict-avoiding management results in even better team coordination and performance in cultures other rather than those in Asian territories.

Consistent with situational theory, our findings indicate that the specific project environment a team is performing in would require certain leadership behaviours and influence the appropriateness of conflict management style. Ideal leadership behaviour, which will be specified by the situation whereby a leader deals with subordinates, would steer the members on the path to success at work. Consequently, the transformational leadership behaviour of leaders, when coupled with specific conflict management styles, cooperative and avoiding styles, is likely to result in different levels of team accomplishments in the industry. Specifically, we reveal the distinctive roles of, and relationships between, transformational leadership, cooperative and conflict-avoiding management styles, and team coordination, in the form of a nomological network [with the use of this network making a methodological contribution to the field of study].

This form of measurement has not yet been put in practice broadly in the extant literature. The outcomes of the analysis reveal that the transformational leadership style of team leaders has a significant influence on team coordination (R^2=0.502). Cooperative and conflict-avoiding management styles have likewise proven essential impacts on team coordination,

R^2=0.426 and R^2=0.102, respectively. In this interdependence, 50% and 34% of the influence of the transformational leadership behaviour of leaders on team coordination are mediated by the cooperative and conflict-avoiding management styles, respectively. An overall R^2 value of 0.561 was attained when analysing the whole structural model, showing that when transformational leadership and specific conflict management styles are shaped as the hierarchical structure model, 66.5% of the variance can be explained by team coordination. This finding contributes to the applied leadership literature by offering support to modern behavioural practice on the antecedents and the role of team coordination in complex and dynamic environments (Wiltshire et al., 2019). This kind of research is significant because it moves forward an efficient means of analysing conflict management and coordination processes at the time of collaboration in teamwork activities to work towards greater achievements.

Given that PLS has been acknowledged as a superior method to shape complex interactions among the variables with lesser necessities for sample size (Hair et al., 2014), the method of PLS-path modelling has made it feasible to analyse the theoretical model of the research. By using the method of repeated indicators to make decisions on the higher-order latent variables, as recommended by Wold (1985), the current research-validated structural solutions are applicable to the proposed conceptual framework. Based on the findings, we argue for the use of cooperative and conflict-avoiding management styles by project leaders in the construction industry for better team coordination and to build productive teams. This argument is contrary to prior studies in the literature that highlight the unfavourable effects of conflict on project performance (Fisher et al., 2011; Wu et al., 2017; Liu, 2016). The literature has not often addressed the likely inclusion of conflict management, especially avoiding style, into transformational leadership behaviour of leaders and the positive relationship between these combinations with team coordination. The current research

certainly presents different understandings of conflict resolution in a multicultural teamwork environment.

We performed a correlation analysis and observed a significant correlation between avoidance and cooperative conflict management styles and four components of the transformational leadership behaviour of leaders (see Table 7). As a result, we propose the incorporation of these two dimensions of conflict management style into transformational leadership models (as proposed by Bass and Avolio (1997)) to develop a more complete measure for evaluating the effectiveness of transformational leadership in project contexts. Since the way transformational leaders address conflict may influence subordinates' inspirational motivation and team cohesion, we propose the inclusion of these two factors into our model for how transformational leaders are acting.

Table 7- Correlation between avoidance and collaboration conflict management styles with transformational leadership attributes.

Correlations

		Avoidance	Collaboration	IM	IC	IA	IS
Avoidance	Pearson Correlation	1	.630**	.409**	.300**	.310**	.371**
	Sig. (2-tailed)		.000	.000	.001	.000	.000
	N	126	126	126	126	126	126
Collaboration	Pearson Correlation	.630**	1	.550**	.333**	.423**	.456**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	126	126	126	126	126	126

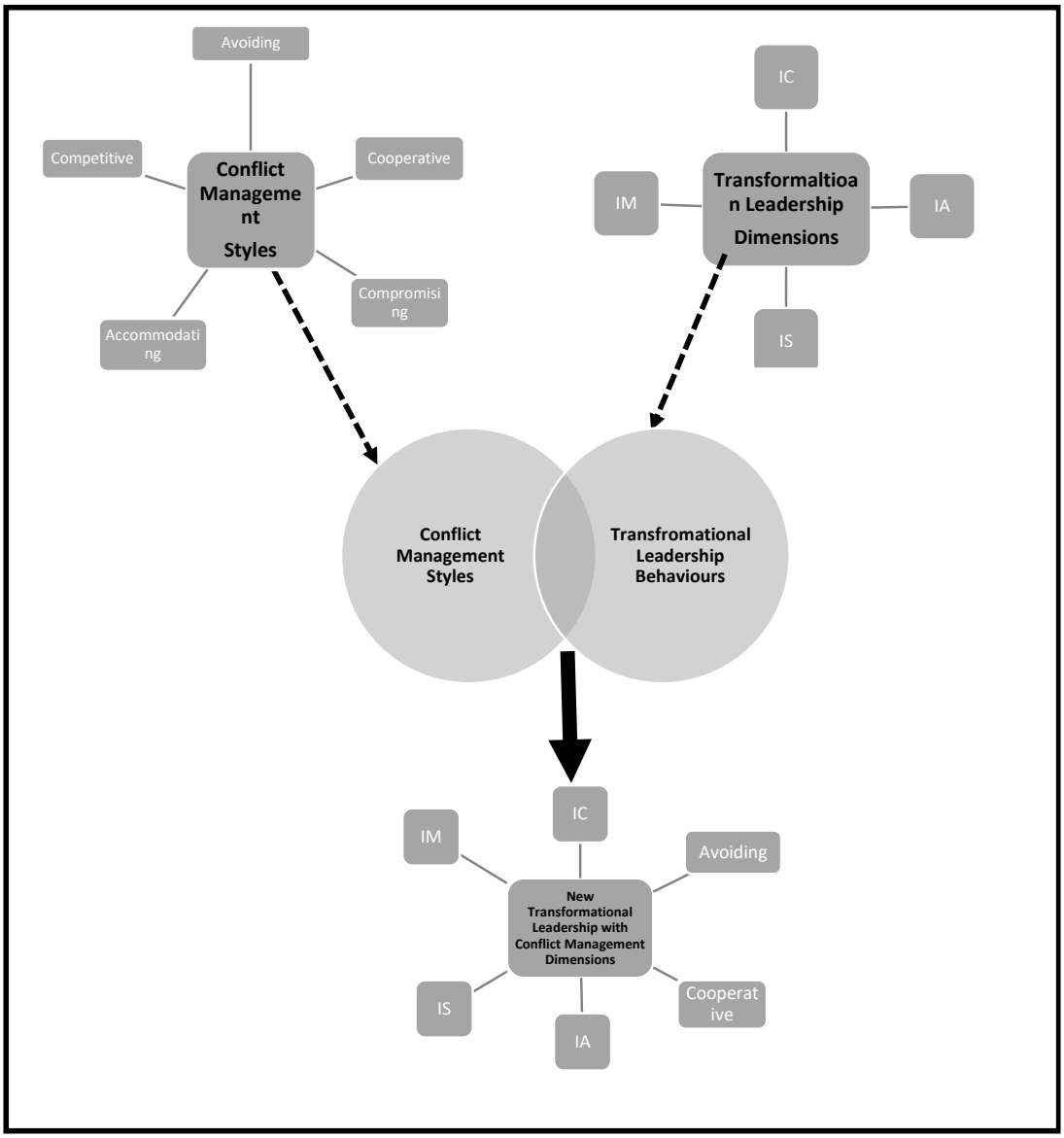
**. Correlation is significant at the 0.01 level (2-tailed).

Based on the findings of the study and relying on situational theory, where project teams are under extreme pressure to deliver the job on time, or in situations where the cause of conflict is not strongly related to the task at hand, conflict-avoiding management style can preserve team unity at a crucial point in time. Since transformational leaders are looking to improve the team in certain situations, for example, in dealing with temperamental members, exploiting conflict avoidance may help them to increase idealized influence in the team. Since a transformational leader is also considered a role model, avoiding conflict, mainly on no-added-value matters, may help teams become skilled at this style and improve their

patience in hearing counter ideas and showing no reactions for no-added-value issues that could be avoided.

In other words, and consistent with our findings on the positive connection of the conflict-avoiding management style with team coordination, it may be suggested that this style could reduce the possibilities of miscommunications and hence escalation of conflict in a multicultural project team environment. Since leadership and conflict resolutions are highly recommended as situational management practices, we suggest that in particular occasions, i.e., where emotions are high, a conflict-avoiding management style could be considered a win for everybody in the group. This is not to say that this approach is always appropriate. As a consistent approach, it can be perceived as passive and may actually aggravate the harmful results of a conflict, leading to situations where one's ideas or solutions to a problem are not fully voiced to others in the team (Chen et al., 2016). However, on some occasions it can be considered an effective approach, enabling conflict to be diffused and allowing time for the team to regroup and then move forward towards a better situation (Mitkus and Mitkus, 2014). Thus, here, a conflict-avoiding management style is not a passive approach. Rather, it is used judiciously, particularly in multicultural project teams where this approach is culturally acceptable. Our model of transformational leadership and conflict management styles is proposed in Figure 4. This will be an area for further research in Western culture as well.

Our analysis compared three ethnic groups through a permutation-based analysis of variance that retains the familywise error rate (FWER) and presents an acceptable level of statistical power (Mooi and Sarstedt, 2011). However, the method of concurrently comparing more than two groups in PLS path modelling has not been widely reported in the literature, and hence, our approach makes an empirical contribution to the application of multigroup analysis in PLS path modelling.



Individualised Consideration (IC), Idealised Attributes, Inspirational Motivation (IM), and Intellectual Stimulation (IS)

Figure 4-New dimensions of transformational leadership

The results and our comparison of the ethnic-specific path coefficients show several variations in the effects. For example, whereas a conflict-avoiding management style has the strongest effect on team coordination in the subsample of teams that were managed by a Malay leader, it has a weaker effect in the subsample with Indian leaders. Instead, cooperative conflict management exerts the strongest impact on team coordination in the Indians subsample, but the results in Table 6 show the moderation effect in this relationship is

not significant, as the differences between the path coefficients are very small. With respect to the Chinese subsample, the effects are somewhat balanced across the five measurements. Interestingly, the results show that team coordination has been stronger when the leader of the team has been selected from Malay ethnic groups. This finding is unique and has not been evaluated in the preceding research from this geographic location in the literature. Our findings provide empirical support for Tinsley and Brett (2001), Knight et al. (2003) and Rosette et al. (2008), who argued that the ethnicity of leaders will have a moderating effect on the leadership style and overall performance of a team. Hence, the findings of the study enhance the understanding of team coordination in multicultural project team environments, where team leaders and individuals from different ethnic groups work together. In our empirical study of the Malaysian construction industry, the findings suggest that mixing ethnicities may increase the chance of productivity.

9.0 Conclusion

Our study offers several revealing insights as contributions to the body of knowledge of project management. The findings indicate that the ethnicity of the leaders exhibited a moderating effect on the transformational leadership style, as well as on the conflict resolution behaviours of leaders. The research findings relating to the cooperative conflict management style of leaders and the influence on the whole team coordination are similar to those presented by Sanders and Schyns (2006) and Deutsch (1990) on the western side of the world together with the findings of Tjosvold (2008), Tjosvold et al. (2005), and Ayoko (2016) in East Asia and Australia. In contrast, our findings in relation to the conflict-avoiding handling style are at odds with Rahim (2002) but consistent with Chen et al.'s (2016), Liden et al.'s (2014) and Fisher et al.'s (2011) proposals. Consequently, the use of conflict-avoiding management, in some situations, needs to be recognised as a reliable leadership alternative by

transformational leaders. In terms of ethnic diversity, which here is linked to a multiplicity of cultures between leaders and project team members, certain conflict management styles, such as avoiding, may be effective if used judiciously and if deemed acceptable from a cultural point of view. The study, in addition to theoretical contributions, has practical recommendations for practitioners. As outlined by the findings, the teams in this study exhibited more desirable coordination when they were composed of different ethnic groups and managed by leaders from Malay samples. Therefore, project team leaders and top management responsible for the composition of project team members need to acknowledge cultural diversity as a positive solution for better team coordination. This involves us becoming more knowledgeable about optimistic aspects of conflict and appreciating the differences in values and perceptions of individuals whenever managing projects in a multicultural atmosphere, similar to the construction environment in Malaysia. Prominence needs to be given to the key role of leaders, in this particular case transformational leaders, and their conflict management styles, for the successful delivery of projects, particularly in situations where the team is composed of people from different cultural backgrounds in temporary environments.

10.0 Limitations and future research directions

Our study has some limitations that provide a direction for future research. We used project teams that work in the Malaysian construction industry as the empirical case for our data collection. Therefore, further investigation is required to test the generalisability of our findings in other countries and/or other industrial sectors. In addition, while we focused on team-based activities and conceived team coordination as a perceptual-based and composite variable, future research may concentrate more on projects in terms of other parameters that rate project “success”, which might assist the predictive strength of the model at the

organisational level, programme level and/or at the project management office level. Finally, future research could also be directed towards the evaluation of ethnicity and behaviour traits of leaders in handling conflict-avoiding styles in multicultural work environments, especially in Western and/or developed countries.

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