ABSTRACT

The purpose of our study is to enhance understanding of the relationships between conflict management style, team coordination and performance in multi-cultural project team context. We investigate how conflict management can contribute to team effectiveness through the mediation of the level of team coordination, by collecting data from 126 team leaders and supervisors and 378 members nested in different multi-cultural projects in the construction industry. Our results show that contrary to the findings from prior research in other team contexts, an avoiding style of conflict management can have a positive impact on the performance of multi-cultural project teams.

Key words: Conflict management style; team performance; team coordination; temporary project organizations; construction projects; Malaysia

INTRODUCTION

Conflict is a process whereby one side perceives that self-interests adversely influenced by another party's actions (Wall and Callister, 1995). It implies that conflict as a process incorporating two or more people or groups, within which a party, for there to be conflict, have to perceive the other party's actions as opposition. Researchers have asserted that conflict is a common trait in every teamwork activity and inherent within daily interactions (Jehn and Mannix, 2001; Tjosvold, 2008; Jia et al., 2011; Müller et al., 2016). Prior works highlighted that the way a team deals with conflict significantly impacts its performance (Liu and Cross, 2016; De Dreu and Gelfand, 2008; Prieto-Remón et al., 2015; Tjosvold, 2008; Yousefi et al., 2010). Though conflict is not only seen to have harmful consequences but also to be remarkably constructive in some team-based work

environments (De Dreu, 2007; De Dreu and Gelfand, 2008; Jehn and Mannix, 2001; Li and Li, 2009; Tjosvold, 2008). Team members' perception of the way in which their desired goals may be affected by actions significantly influences both the nature of interactions and the final results of conflict management (Deutsch, 1990). Preceding studies also outlined that conflict is more likely to arise and escalate when cultural differences are present among the parties (Fisher, 1990). Consequently, different cultures may possibly use different methods in dealing with conflict in the course of managing multi-cultural teams. It has also been noted that how a team manages conflict greatly affects team performance (De Dreu, 2007; De Dreu and Gelfand, 2008; Jehn and Mannix, 2001; Tjosvold, 2008). Consequently, different approaches to manage conflict in group environments may affect the way teams are coordinating. Furthermore, earlier research in predominantly Western contexts suggests that in temporary organization the coordination of a team influences the team efficiency along with the overall project performance (O'Leary-Kelly et al., 1994; Mitropoulos and Cupido, 2009; Stott and Walker, 1995). Though these relationships have not been widely tested in other cultural contexts, such as East Asia.

In temporary organizations, coordination is a core competency of the team leader (PMI, 2017). Coordination issues have been emphasised by researchers in a wide range of contexts including organizational design, technology adoption and innovation, group competition, to name just a few (Zhang et al., 2011; De Dreu, 2007; Müller et al., 2016; Yousefi et al., 2010). Team coordination in many temporary organisations, such as those in the construction industry, takes place in the context of highly complex and dynamic environments (Loosemore et al., 2003). Hence it presents a challenging context for achieving effective teamwork (Tabassi and Bakar 2009; Tabassi et al., 2012).

To contribute to our understanding of one particular challenging context, the objective of this study is to investigate the relationships between conflict management approaches, team coordination, and performance of multi-cultural project teams. Our understanding of the mechanisms by which team leaders exert influence at the team level, through such actions as conflict management and coordination, is still limited (Sun et al., 2014); hence, by investigating the practices and performance of project teams in this context our study has significant theoretical contributions.

The empirical context for this study was of the Malaysian construction industry. This industry was chosen because the temporary organizations undertaking projects in this sector are typically multi-cultural, being made up of three main ethnic groups, with each having their own cultural norms and values: Malays, Chinese and Indians. This reflects the composition of the general population in the country i.e. in 2010, Malays made up 60.3%, Chinese 24.6%, and Indians 7.1% of the total population (Department of Statistics Malaysia, 2011). Generally, limited prior research has investigated East Asians' approaches to managing conflict, specifically looks at temporary multi-cultural teams. Furthermore, in project management, as with other management disciplines, people-related issues have been getting more attention in East Asia countries such as Malaysia, as firms are recognizing the impact of the management of human resources on organizational performance (Chen et al., 2016a).

Hence we sought to answer the following broad question, how do Malaysians approach the management of conflict in temporary multi-cultural (TMC) teams and do these approaches lead to different outcomes, in terms of team coordination and performance? We sought to answer this question through a hierarchical regression analysis of data from 126 teams in TMC organizations undertaking construction projects in Malaysia.

CONFLICT-HANDLING STYLES

The rapid growth of complex projects in the construction industry across the world resulted in varied inter-organizational conflicts (Wu et al., 2017; Hu et al., 2017). The influences of conflicts among team members on project performance in the industry could be destructive or constructive, relying on plenty of variables such as conflict management style of leaders, nature of conflict, the perceptions of team members in working with conflict, etc. (Wu et al., 2017). However, there are different conflict-handling styles that individuals may employ when interacting with others in interpersonal or business engagements (Kleinman et al., 2003; Chiocchio et al., 2011; Wu et al., 2017). Effective styles lead to conflict resolution, enhance work steadiness (), promote feelings of self-efficacy among team members, minimize the likelihood of negative conflicts in future works, and also result in a company's long-term financial growth (Rubin et al., 1994; Cheung and Chuah, 1999).

Pressure to come to an agreement (Baron 1988), power differences (Zartman and Touval, 1985), complexity of the organization's task (Chiocchio et al., 2011), as well as interdependence of the units (Lawrence and Lorsch, 1986), culture and leadership styles (Kozan, 1989; Chiocchio et al., 2011) all influence the way conflict ought to be managed. The literature indicates that the success or otherwise of dealing with conflict has a direct impact on project performance of temporary organizations (Lundin and Soderholm, 1995; Müller et al., 2016). In such organizations the negative consequences of a failure to deal with conflict has two root causes: firstly, the failure to deal with technical conflicts that arise from different role perspectives (Chen et al., 2014) and secondly, distrust amongst team members or different personal behaviors (Tjosvold, 2008). As stated above conflict per se is not necessarily negative. Hence conflict should be effectively managed in order to realize the optimum level (Leung et al., 2014).

A number of theoretical styles of dealing with interpersonal conflict have been proposed i.e. Rubin et al. (1994); Rahim & Magner (1995); Kleinman et al. (2003). These theorists build on the pioneering work of Blake and Mouton (1964), who classed conflict managing strategies into five styles: forcing, withdrawing, smoothing, compromising, and confrontation. The authors further grouped these five strategies under two broad dimensions, which are associated with the behavior of the team leader, namely: 1) concern for people and 2) concern for task. In 1976, Blake and Mouton's styles for handling conflicts in team environments were reviewed and refined by Thomas (1976, cited in Rahim & Magner, 1995). Thomas also grouped the methods of coping with conflict into five styles and he also identified two main dimensions: 1) cooperativeness, within which individual's concerns are higher for peers; and 2) assertiveness, when self-concerns are more significant. Along with these two dimensions, five different conflict resolution styles were presented, based on the degree to which an individual practices cooperativeness or assertiveness which are named as: cooperative, competitive, accommodating, avoiding and compromising (Rahim and Magner, 1995).

"Cooperative" Approach to Conflict Management and Team Coordination

Interdependence in conflict management, which was proposed by Deutsch (1990), outlines a scenario in which individuals value peers' abilities and options that primarily leads to cooperative goal achievement and open communication in dealing with conflict (Tjosvold et al., 2001). In the event that people feel they need others abilities, opinions, and resources they are more likely to be encouraged to cope with conflict cooperatively. Accordingly, they may also reach a point where to have a long-term relationship and to be able to continue to work together in an effective fashion it would be necessary to resolve conflict cooperatively for mutual gain. Project managers with cooperative conflict management style are more open in coping with conflict and even rated

as more successful leaders. However, it can be concluded that mutual dependence aids cooperative conflict management which could result in better project coordination. In collectivist societies, such as China, were empirical study has been undertaken, it has also been found that managing conflict cooperatively can lead to higher perceptions of fair treatment amongst individuals, which in turn leads to better team performance (Chen and Tjosvold, 2002).

In terms of achieving win-win situations, a cooperative style encourages open-minded interactions, in order to realize opposing concepts, assimilate opposing views, develop acceptable alternatives, and strengthen individuals' relationships. This results in mutual solutions that are favorable to both parties (Walton and McKersie, 1965). Team members can adopt a cooperative conflict resolution strategy by concentrating on their shared aims. They will demonstrate that they seek mutual profit from an activity, are seeking to solicit everyone's point of views, and are available to integrate different suggestions in order to set up a mutually practical solution (Deutsch, 1990; Tjosvold, 1985). A cooperative style is characterized by open communication, responsiveness to others, shared understanding, and the development of mutually favorable alternatives (Sanders and Schyns, 2006; Ayoko, 2016).

So a cooperative conflict management style is seen to promote high team performance and desirable individual behavior (Tjosvold et al., 2005). In addition, teams that are able to deal with conflict cooperatively are also able to improve their own performance (Tjosvold et al., 2003). Specifically, expressions of individual satisfaction of being a part of the team, team efficacy, boosts to innovation and creativity, and even better goal achievement are all claimed as outcomes of cooperative approaches to the management of conflict (Tjosvold, 2008).

So it is hypothesized that there will be a positive relationship between this style of conflict management and team co-ordination. Hence, the first hypothesis to test is:

H1: The cooperative conflict management approach within the TMC organization undertaking projects is positively related to effective team coordination.

"Competitive" Approach to Conflict Management and Team Coordination

Competitive conflict increases independence among team members. A competitive style (high concern for self and low concern for others) has been linked with a win-lose scenario. It is a confrontational approach that leads to one side capitulating to the other. Yang et al. (2013) listed some of the commonly used tactics in this style, which include: very direct communication with regards to the issues, persistent disagreement with other parties' opinion and remaining rooted to one's own position and attempts to seize control of the communication channels.

Managers/team leaders who implement this strategy typically impose their thoughts or opinions onto their subordinates, and the conflict often ends with undesirable results. Such leaders emphasize their competitive pursuits; which may result in others moving away from attainment of the project goal. They are inclined to look at conflict as a win-lose challenge; if the other wins, they lose. This discourages effective communication and leads to the imposition of an opinion by the most powerful party to the conflict. Individuals with more focus on independence and with less emphasis on interdependence may gravitate towards the competitive style in coping with conflict, which increases the probability of a perceived maximum personal gain, as opposed to the gain in win-win situations (De Dreu and Gelfand, 2008; Prieto-Remón et al., 2015; Tjosvold, 2008). To explore the impact of the competitive style of conflict on the working of the team, in the context of the effectiveness of coordination activities, we hypothesized that a negative relationship exists between this style of conflict management and team coordination.

H2: The competitive conflict management approach within the TMC organization undertaking projects is negatively related to effective team coordination.

"Avoiding" Approach to Conflict Management and Team Coordination

The avoiding approach seeks to smooth over conflicts quickly, by minimizing dialogue on the issues. Avoiding conflict management style typically is predicated on the fact that pitfalls and issues should not be brought into the open and discussed between the parties. It is characterized as having low concern for self and for others and seeks actions that will serve to limit dealing with the conflict clearly, either by disregarding it or switching discussions to a new subject. This style of conflict management has been related with disengagement, buck-passing and side-stepping scenarios (Rahim, 2002). Those who adopt this style of conflict management do not show strong emotions of anger and irritation. They are inclined to act as if they are indifferent both to their own personal concerns and to the concerns of other team members.

An avoiding style of conflict management has been observed in East Asian contexts. The East Asian collectivist cultures tend to be thought to focus on interdependence and a tacit acknowledgement that individuals greatly depend upon each other (Tjosvold, 2008 and Tjosvold et al. 2001). Accordingly, some people may adopt this style of conflict resolution only because they intend to maintain their relationships, which might though result in a dysfunctional project team operation. To explore the likelihood of outcome arising from practicing the avoidance style of conflict management we generate our third hypothesis.

H3: The avoiding conflict management approach within the TMC organization undertaking projects is negatively related to effective team coordination.

"Accommodating" Approach to Conflict Management and Team Coordination

An accommodating style (low concern for self and high concern for others) is characterised by an imperfect assessment of alternate options, as well as one-sided functions of giving in to others, which usually results in lower quality in the decision-making (Kuhn and Poole, 2000). An accommodating individual disregards their own concerns in order to take care of other's. This style of conflict management usually happens in the event that conflicts are going to be managed with superiors, in particular whenever the managers or superiors are seen as being quite dominating. In addition to the above, an accommodating approach has been also observed in situations when personal interests clash with those of the project, organization, or even when a minority point of view conflicts with that of the majority. It is associated with amenable behavior that consists of putting aside one's own desires in order to be able to satisfy the other party, agreeing with the other parties' decisions, and giving way to arguments or statements of others, by denying or declining to express one's own ideas (Liu et al., 2009). Such behaviours may well impact negatively on the functioning of the team; hence our fourth hypothesis:

H4: The accommodating conflict resolution approach within the TMC organization undertaking projects is negatively related to effective team coordination.

"Compromising" Approach to Conflict Management and Team Coordination

The compromising conflict management style is placed at the middle of the continuum of the two dimensions: concern for self and concern for the others. Compromising strategies exhibit moderate attention to seek mutual agreements, but have less interest in putting a collaborative effort in to achieve them. This style has been called characterised as a half-hearted problem solving alternative (Pruitt et al., 2004). Both sides could possibly achieve certain benefits, as well as some losses, through the give-and-take where each party may give up some necessary desires or targets – with a less than optimal result being agreed upon (Rahim and Magner, 1995). People

typically adopt this style in the event that a willingness to unravel the root causes of conflict is not completely sustained. A compromising approach entails different tactics such as: bowing to the concept of justice, advising on trade-offs, increasing gains and reducing losses, meeting the parties' midway, splitting the costs of variations and looking for rapid and short term resolution to the conflict at hand (Liu et al., 2009). It has also been outlined as unique in the sense that it centres on meeting the individual's self-needs along with the needs of others (Gross and Guerrero, 2000). Compromising is typically perceived as an essential complement to other strategies to be able to solve conflicts in not only Western organisational contexts, companies, but also with some East Asian environments i.e. styles adopted by Chinese managers (Liu et al., 2009). Prior research suggests that a compromising style has positive consequences on the innovation success of companies (Gobeli et al., 1998) and is positively related to team performance (Coetzer and Trimble, 2010) and is negatively related to harmful aspects of conflicts (Vollmer, 2015). Hence, our fifth hypothesis is as follows:

H5: The compromising conflict management approach within the TMC organization undertaking projects team is positively related to effective team coordination.

CONCEPTUAL FRAMEWORK DEVELOPMENT

The term performance in group work environment has been widely put in place to reflect the activities' ultimate outcomes as well as to figure out if an individual and/or a team is remaining productive or not (Tabassi et al., 2017). In the construction industry, different project teams are mostly formed the focal point of project delivery in the industry. For that reason, the dynamic transforming characteristics of construction activities demand construction organizations to gain or even develop several teams whenever a new project or a new phase of a project is carried out (Raiden and Dainty, 2006). Therefore, any techniques and procedures that are appointed by the

organisation as means to further improve teamwork coordination could possibly convey favourable results to the overall team or project performance (Tabassi et al., 2017).

Thus far, research on conflict management showed more focuses on the relationships between conflict handling style of the leader and team performance (De Dreu and Gelfand, 2008; Prieto-Remón et al., 2015; Tjosvold, 2008; Rahim, 2002; and Tjosvold et al. 2001). Alternatively, the relationship between team coordination and team performance has been the focus of a number of prior studies in the management literature (Rico et al., 2008; Yukl, 2006; Zhang et al., 2011; Banks et al., 2016; Tuncdogan et al., 2017). Coordination processes involve the activities orchestrating the relationship and scheduleing interdependent tasks in the team environment, just like for example managing work, setting up the tasks of each member, and detailing guidelines and regular procedures of doing activities (Yukl, 2006; Zalesny et al., 1995). In the same way, coordination activities are observed as necessary conduct for teams to be able to exchange information and straighten the course of team member actions (Marks et al., 2001; Tuncdogan et al., 2017). Even though we aware of the critical relationship between conflict management and team performance, limited studies have examined conflict management style of leaders, coordination, and performance all together, particularly in multi-cultural team environment in the construction industry. We contribute to enriching such understanding by investigating the mediating role of coordination mechanisms. Hence, the overall conceptual framework for the research reported in this paper is depicted in Figure 1. The hypotheses focus on three specific relationships: the link between conflict management approaches and team coordination; the link between team coordination and team performance; and the link between conflict management approaches and team performance, mediated by team coordination.

Insert Figure 1 about here

The relationships between conflict management approaches and team performance and between conflict management approaches and team performance, mediated by team coordination, are explored through the following two hypotheses:

H6: Team coordination is positively related to team performance within the TMC organization.

H7: Team coordination mediates between conflict management approaches and team performance within the TMC organization.

MEASURING INSTRUMENTS AND DATA COLLECTION

Team performance was measured using an adaption of Tabassi et al. (2017) survey instrument. Tabassi et al.'s instrument was based on the work of Hirst (1999) and an additional item, team cohesiveness, which is also pointed out in the Guide to the Project Management Body of Knowledge (PMI, 2017).

The study adapted a scale for measuring the team coordination that was initially formulated by Hackman (1983: as cited in Zhang et al., 2011) and is widely applied in organizational research (e.g. Zhang et al., 2011; De Dreu, 2007).

The conflict management styles were measured using a previously validated instrument devised by Northouse (2011), which is available from (www.sagepub.com/northouseintro2e). The team members were asked to rate on a 5-point Likert scale (1 = "Never" to 5= "Always") the conflict management style of the leaders.

Whilst the team formed the unit of assessment in this study, and since the data on conflict management were acquired at the individual team members' level, therefore, it needed to be aggregated. Yet any such aggregation needs to be validated by theoretical as well as empirical

justifications (Rousseau, 1985). Whether conflict resolution and management activities, as perceived by team members, may be aggregated and used to value the styles of handling conflict is a controversial issue (Yammarino and Dansereau, 2008). Interaction among team members allows for sharing and processing of information regarding the team leader, which probably results in the individuals' homogeneous concepts of approaches for managing conflicts within the team (Zhang et al., 2011). Hence, to achieve the desired aggregation James et al. (1984) recommended the use of the multi-item, which is measured as follows:

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

The $r_{WG(J)}$ index applies the Spearman–Brown prophecy method to incorporate the number of items in the calculation of within group agreement. Hence, J is the number of items in a measure and S_k^2 is the average variance of the J items in a group of k-raters.

The study evaluated the theorized model (Figure 1) by utilizing a multilevel design (Ju et al., 2016) with individuals (level 1) nested in projects (level 2). Data were collected from three different level 1 sources: team members rated the five approaches to conflict management that could be exhibited by team leaders, including cooperative, competitive, accommodating, avoiding and compromising; the team leaders evaluated the level of team coordination, and lastly, the supervisor of each team rated the team performance. As outlined by Zhang et al. (2011), this method of data collection will reduce the risk of common method variance (CMV) as a possible alternative for justification of the results.

With regards to data collection, three distinct types of survey questionnaires were dispersed between the respondents. The measurement of items was done primarily using the Likert Scale of 5 ordinal measures from one (1) to five (5) based on the degree of

importance/agreement. An invitation notice was delivered to 800 large sized construction firms in Malaysia. At the end of a six-month period, 126 teams had agreed to participate in the research. Seven research officers were then directed to the respondent companies in several locations in Malaysia. In order to reduce likely bias, the three members from each team were randomly selected to assess the conflict management style of their team leader.

SAMPLE

The respondents incorporated 378 members of 126 construction project teams in Malaysia and their equivalent 126 team leaders, along with supervisors from the upper-level administrative headquarters for each organization. The minimum sample size was verified and a reactive Monte Carlo analysis was carried out (Chin, 1998). Consequently, the sample size of 126 surpassed the suggested minimum of 54 that considered sufficient for model testing (Green, 1991).

The size of the teams ranged from 3 to above 20 members, having an average of 6-10 (Standard Deviation = 1.47). For all of the team members (excluding team leaders), 48.9 per cent were female and 50 per cent were male (1.1 did not clarify their gender). The rates of different ethnic groups between the team members were Malay 25.1, Chinese 58, Indian 16, and others 0.9 per cent. The degree of experience in the construction industry pertaining to the team members revealed that 55 per cent had 1-5 years of experience and 33.6 per cent had 6-10. 71.7 per cent had a bachelor's degree or higher in terms of educational attainment, 22.4 per cent had acquired a diploma from junior colleges and 5.9 per cent graduated from technical secondary schools or others. On the other hand, 61.9 per cent of the team leaders were male and 66.7 per cent had 6 years or more experience in the industry. The percentages of different ethnics for team leaders were: Malay 28.6, Chinese 43.7, Indian 27, and others 0.8 per cent. With regards to educational

level, 77.8 per cent had a bachelor's degree or higher, and the rest had graduated from junior colleges.

DATA ANALYSIS AND RESULTS

To analyze the data and evaluate the hierarchical hypothesized model, Smart PLS path modelling (PLS-PM) was used, with a path-weighting scheme for inside approximation (Chin, 2010; Tenenhaus et al., 2005; Wetzels et al., 2009). Subsequently, nonparametric bootstrapping was employed with 500 replications in order to be able to attain the standard estimate errors (Chin, 2010). To assess the higher order latent variables, the method of repeated indicators was also applied, as outlined by Wold (1985), Lohmöller (1989) and Efron and Tibshiran (1993).

Conflict Management Assessment

The degree of explained variance in the hierarchical model was reflected in its components: cooperative (62.6%), competitive (1.1%), accommodating (-2.5%), avoiding (23.6%), and compromising (4%). However, only the path coefficient from cooperative approach to team coordination was statistically significant (at P <0.01). In addition, the avoiding approach to conflict management showed a p value less than 0.1, which is partially significant to team coordination. The composite reliability (CR) and average variance extracted (AVE) of all constructs were above 0.7 and 0.5, respectively, which exceed the recommended cut-off values (Hair et al., 2014).

The $r_{WG(J)}$ index scores for each conflict management style were as follows: cooperative (0.908), competitive (0.899), accommodating (0.91), avoiding (0.913), and compromising (0.908).

Despite the fact that generally there is some disagreement related to the 'cut-off' value r_{WG} (Lance et al., 2006), these values are higher than the commonly agreed upon 0.70 value. Furthermore, the percentage of r_{WG}> 0.70 for the aggregated parameters was calculated to be 86

per cent. Additional analysis was carried out and there was no team with a r_{WG} lower than 0.50 across any given construct.

The Measurement Model

To assess the components of the measurement scales, a confirmatory factor analysis (CFA) was performed, based on the procedure of Chin (2010), to assess the reliability, convergent validity, and discriminant validity of the scales (see Tables 1 and 2). Table 1 shows the results of Common Method Variance (CMV).

Insert Table 1 about here

The average variance extracted (AVE) for all constructs was more than 0.5 and the composite reliability (CR) of the constructs was above 0.7. These values are above the minimum recommended levels so as a result CMV was not been deemed to be an issue in this study (Fornell and Larcker, 1981; Gefen et al., 2000). Also, as revealed by Table 1, most of the item loadings were close or larger than 0.7 and significant at 0.01. The items for the cooperative style of conflict management exhibited the lowest CR of 0.7891; even so, all values were higher than the recommended standard values. The results confirmed convergent validity as all indicators loaded significantly higher onto their particular hypothesized component as compared to other factors (own construct loadings were greater than cross loadings; Chin, 2010). The Fornell-Larcker criterion approach was used to assess discriminant validity. The square root of the AVEs were calculated and compared with the latent variable correlations. The results, which are presented in Table 2, demonstrate discriminant validity as the square root of each construct's AVE was higher than its largest correlation compared with any other construct in the model (Chin, 2010; Fornell and Larcker, 1981). Furthermore, there was no correlation higher than 0.9 among the constructs observed (Chin, 2010), except for the compromising style of conflict

management construct, which was exactly 0.9. As a result, the proposed model was deemed to be satisfactory, with proof of sufficient reliability, convergent validity, and discriminant validity and was accepted for evaluating the hypotheses and validating the research model.

Insert Table 2 about here

Assessment of the Structural Model

In Table 3, the results give a standardized beta of 0.24 from the avoiding style of conflict management to team coordination, 0.63 from cooperative style, to team coordination, 0.11 from cooperative style to team performance, and 0.35 from team coordination to team performance.

Insert table 3 about here

Thus, there was support for H6: team coordination is positively related to team performance within the TMC organization and for the alternative to H1: the cooperative conflict management approach within the TMC organization undertaking projects is positively related to effective team coordination. The other two conflict management approaches which showed some positive relationship with team coordination, competitive and compromising, were not statistically significant. Hence H2 and H5 are not supported. The results showed that the avoiding conflict management style positively related to team coordination, being significant at the 0.1 level. So the H3 has been rejected and there is support for the alternative hypothesis to H3, which can be refined as: The avoiding conflict management approach within the temporary multi-cultural organization undertaking projects is positively related to effective team coordination. However, the accommodating conflict management style showed a negative relationship with team coordination, though it was not statistically significant. So H4 was not supported.

Mediating Effects

In Figure 2, the mediating effect of team coordination on the relationship between the conflict management styles and team performance were analyzed and H7: Team coordination mediates between conflict management approaches and team performance within the TMC organization tested. Three criteria for mediation analysis were established as follows:

- two independent variables (avoiding and cooperative styles of conflict management) had a significant effect on the mediator (team coordination)
- the mediator (team coordination) had a significant influence on the dependent variable (team performance)
- two independent variables (avoiding and cooperative styles of handling conflict) had a significant influence on the dependent variable in the absence of the influence of the mediator.

To set up the mediating influence, the indirect impact of a×b (see Figure 2) must be significant.

Insert Figure 2 about here

The z statistics test (Sobel, 1982) were employed, which were significant at $p<0.05$. If the z values surpass 1.96 ($p<0.05$), then H2 can be accepted, i.e., there is an indirect effect from the conflict management style (in this particular case avoiding and cooperative styles of handling conflict), through team coordination, on team performance. The z values are calculated as follows:

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

$$z_a = \frac{0.626 \times 0.35}{\sqrt{(0.35^2 \times 0.0573)^2 + (0.626^2 \times 0.0785)^2 + (0.0573^2 \times 0.0785)^2}} = 4.113$$

$$z_b = \frac{0.236 \times 0.35}{\sqrt{(0.35^2 \times 0.0687)^2 + (0.236^2 \times 0.0785)^2 + (0.0687^2 \times 0.0785)^2}} = 2.68$$

As displayed in Figure 2, there was a significant effect from the cooperative conflict management style on team coordination (0.626, p<0.01), as well as from team coordination on team performance (0.35, p<0.01). The z value is greater than 1.96 (p<0.05), so consequently the result confirms the mediating role of team coordination, indicating that it has an indirect effect on team performance, hence H7 is supported.

There was also a significant effect from the avoiding conflict management style on team coordination (0.236, p<0.01) as well as from team coordination on team performance (0.35, p<0.01- see Figure 2). The z value also exceeds 1.96 (p<0.05).

To approximate the size of the indirect effect in the model, the Variance Accounted For (VAF) value was calculated, which represents the ratio of the indirect effect to the total effect. The VAF value for the first model (Figure 2) shows that almost 67.1% of the total effect of the cooperative conflict management style on team performance is explained by an indirect effect (team coordination).

$$VAF_a = \frac{a \times b}{a \times b + c} = \frac{0.626 \times 0.35}{0.626 \times 0.35 + 0.107} = 0.671 \qquad \text{Eq. 3}$$

The VAF value for the second model (Figure 2) indicates that nearly 21.5% of the total effect of the avoiding conflict management style on team performance is accounted for by the indirect effect (team coordination).

$$VAF_b = \frac{a \times b}{a \times b + c} = \frac{0.236 \times 0.35}{0.236 \times 0.35 + 0.302} = 0.215$$

RESULTS AND DISCUSSION

Team leaders' conflict management styles were framed as hierarchical constructs, with the results indicating that two dimensions (cooperative and avoiding styles) exert significant positive influence on team coordination. This result adds theoretical support for Ayoko (2016), Tjosvold

(2008) and Chen et al. (2016b), which acknowledged the aforesaid two conflict management styles as methods which result in enhanced team performance. Though it contradicts the findings of Chen and Tjosvold (2002), in relation to the impact of the avoiding style. In other words, the cooperative and avoiding conflict management styles are those that are strongly linked to enhanced team performance in temporary project organizations in the construction industry, which has not been studied well by preceding research.

The prior literature suggests that the creation of such organizations in the construction industry presents complex settings for effective management and leadership due to the dynamic and complex organisational, project and skill requirements (Tabassi et al., 2017). In response to this, team leaders will have the ability to deal with this dynamism and complexity and to enhance teamwork accomplishments by employing relevant conflict management styles. In line with situational theory, different circumstances may very well necessitate distinct leadership behaviour by team leaders. Therefore, the condition in which a project team is performing in a temporary organization may well influence the appropriate conflict management style to be adopted by the project team leader.

Whilst some earlier research found a negative relationship between the accommodating conflict management style and team performance. i.e. Kuhn and Poole (2000) and Liu et al. (2009), our study found no such statistically significant relationship. In addition, the two other conflict management styles: competitive and compromising, had no significant relationship with either team coordination or team performance. These results may be due to the fact that in such temporary project organizations there are certain situations that will ask for accommodating or competitive conflict resolution styles in order to achieve better team performance. The project teams may not find enough time for communication and mutual interaction, rather the team

leaders need to look for some consensus or even a sense of quick completion in order to reach a solution. Although accommodating and competitive conflict management styles showed positive relationships with team coordination, which are against the initial expectation which hypothesized a negative relationship, these relationships were not statistically significant. So it can be concluded that there are no significant relationships between compromising, competitive and accommodating conflict management styles and team coordination and, accordingly, on team performance.

Based on the initial investigation of the effects of the five conflict management styles on team coordination, the study found that only avoiding and cooperative approaches showed a significant contribution to team performance, through the mediation of team coordination. As a result, models were generated and tested to identify the effects of each of the aforesaid two conflict management styles on team coordination and team performance; with the results revealing that of these two ways of managing conflict the cooperative style (β=0.6262) is the most significant influence, accompanied by avoiding conflict resolution (β=0.236), on team coordination.

In addition, the study has explored the unique role of the conflict management, team coordination and team performance in a nomological network; a measure that has not to date been demonstrated in prior research reported in the extant literature. Our study reveals that the cooperative and avoiding conflict management styles have significant influence on team coordination (R^2=0.408), which in turn has an influence on team performance (R^2=0.205). In this interdependence, 67% and 21.5% of the influence of the cooperative and avoiding conflict management resolution, respectively, on team performance is mediated by the team coordination. This finding suggests that the team coordination has a crucial mediating key role in the

relationship between the conflict management style adopted by team leaders and the effectiveness of team performance. In addition cooperative and avoiding conflict management styles have a direct impact on team performance, together with team coordination, and that both constructs explain 20.5% of the variance in team performance.

By using the method of repeated indicators, as recommended by Wold (1985), to identify the higher order latent variables, this particular study has verified fundamental dimensions and structural solutions for the suggested research model. It makes significant contributions to knowledge and practice by proposing the avoiding conflict style, along with cooperative conflict resolution approaches, in temporary project environments in the construction industry of Malaysia. Furthermore, assessing the hierarchical conflict management styles of cooperating and avoiding, integrating their impact on team coordination, and evaluating the influence of both styles on team performance is a further contribution of the study in both knowledge and practice.

Given that prior research has mainly focused on exploring the negative impact of conflict on project performance, see for example Harmon (2003), Yiu and Cheung (2006), Tazelaar and Snijders (2010) and Mitkus and Mitkus (2014), the suggested positive relationships found in our study between certain conflict management styles, especially avoiding, highlights potential team based strategies for enhancing the performance in certain multi-cultural project environments in East Asia.

The positive impact of the cooperating style of conflict resolution reflect the fact that many project team leaders typically have a democratic or caring leadership style and that they engage in open and direct communication with all the parties that make up the temporary organization. Accordingly, finding such a positive relationship between this style of conflict handling and team coordination is not unexpected and indeed lends support to the findings from

related studies of other organizational contexts i.e. Chen and Tjosvold (2002), Sanders and Schyns (2006), Ayoko (2016), Tjosvold et al. (2005), Tjosvold et al. (2003), and Fehr and Gachter (2000).

The finding that avoidance, as an approach, may be a good choice to reach a better team coordination and accordingly team performance suggests that in temporary organization conflict management could be considered as a situational management practice, in that different styles may be related to different characteristics, such as being multi-cultural, in the teams. Accordingly, there may be certain situations, such as where one party in the temporary organization is demonstrating a high level of negative emotion, such as anger or frustration, where the avoiding style is the best, perhaps in the short-term, for the project. Whilst it is accepted that avoidance, as a passive method of coping with conflicts, could possibly worsen the unfavourable effects of a conflict, which may result in one's ideas and opinions not being effectively voiced in the conflict condition (Chen et al., 2016b); there may a case where an initial avoidance approach let's a negative situation diffuse. Then it could be later addressed using more active styles such as cooperation. An avoidance approach could be viewed as a flexible and pragmatic approach, putting a temporary lid on things whilst a lasting solution is found (Fisher et al., 2011). When differing opinions exist amongst members of the temporary organization it might be useful to note them and then seek to resolve the conflict later. This is an alternative to a passive-avoiding conflict management style, which typically implies not dealing with the conflict at all. Rather it is avoiding direct confrontation or argument in order to seek a better time or a more suitable occasion to deal with the conflict.

Synthesizing the study findings with the literature, suggests Figure 3 in order to generate a matrix on possible outcomes for project and team members from the five conflict-handling

styles. Here there are 13 transactional results that can take place in conflict management resolution, with 2 of these conflict management styles being ideal strategies to ensure win-win scenarios where the concerns of both project and people are met.

Insert Figure 3 about here

This allows us to accept that, whilst the majority of prior literature states that the avoiding conflict style is a lose-lose scenario, there could be situations in which both the project and the individual parties within the temporary organization both achieve some of their goals, even though one side wins slightly, or even a great deal, more from the avoiding of conflict than the other. It also highlights that the different "win-win" situations linked to the avoiding conflict style, represented by boxes A, B, C and D in Figure 3, are what is typically suggested by mutuality in avoiding conflictual relationships.

CONCLUSION

The main purpose of this research was to evaluate the effects of the conflict management styles that are adopted by team leaders in temporary organization in multi-cultural teams in the construction industry on team coordination and, accordingly, on team performance. Hence, the paper has examined the mediating impacts of team coordination on conflict management and team performance. In conclusion, the findings show that team leaders working in multi-cultural temporary organizations in the Malaysian construction industry choose avoidance and cooperative approaches to manage conflict, rather than the other three approaches. In the case of the cooperative conflict management style and its effect on overall team performance our findings is similar to Deutsch (1990) and Sanders and Schyns (2006), in Western organizational contexts, as well as the works of Tjosvold et al. (2005), Tjosvold (2008), and Ayoko (2016), which focused on East Asian nations and the Australasian Continent, but in different context and

not in temporary organizations. Nonetheless our findings on the effect of the avoiding conflict management style is in contrast with those presented and claimed by Rahim (2002), but lend practical weight to the suggestions of Chen et al. (2016b) and Fisher et al. (2011). Accordingly, our final argument is that if the ideal goals of the team members of the temporary organization and of the project are non-commensurable, equity-based "win-win" results in relationships can be illusory and an ideal normative mutuality in relationships will never be reached. As a result, avoiding conflict resolution could be deemed as a win-win situation for both people and project.

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

The current study has certain limitations that offer direction for future studies. The study was carried out within temporary organizations in the construction industry in Malaysia. For that reason, additional research, of a similar nature, will be necessary to test whether the findings are generalizable to other multi-cultural project environments in other East Asia countries and in other industries; and also how they differ from the conditions found in developed countries. At the same time, effective parameters that might assist the predictive strength of the model need to be further explored. A final area for future work is on aspects relating to the temporal nature of the project organization and how this might have consequences in terms of the interdependencies of the different conflict management styles.

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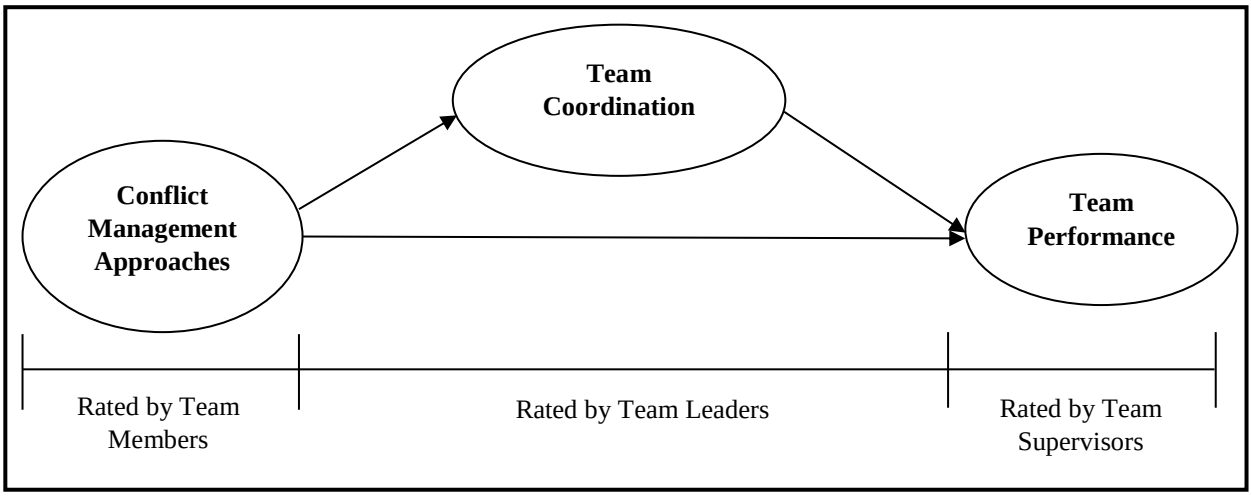

Figure 1- Hypothesised Model

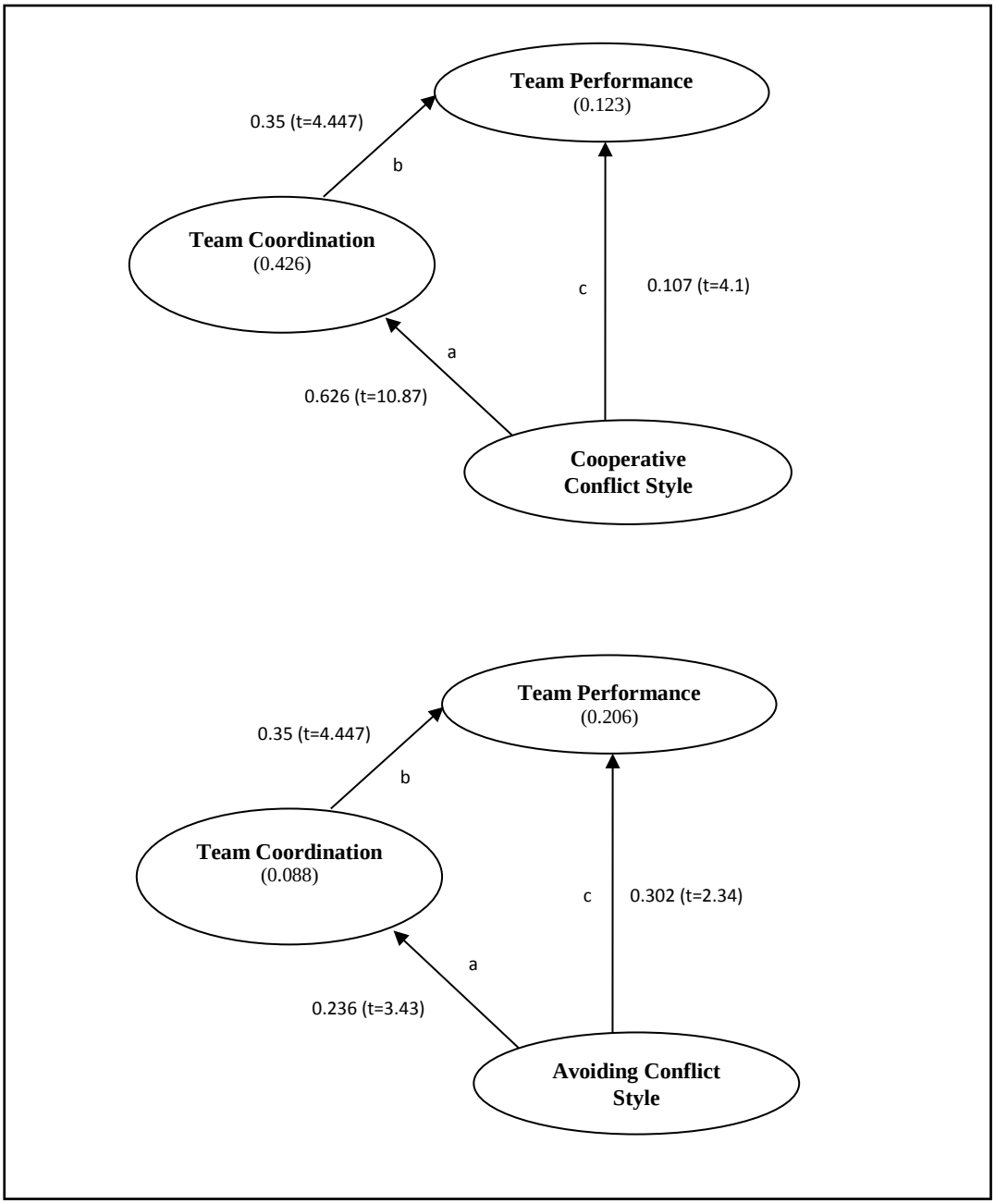

Figure 2 Results of Hypotheses Testing

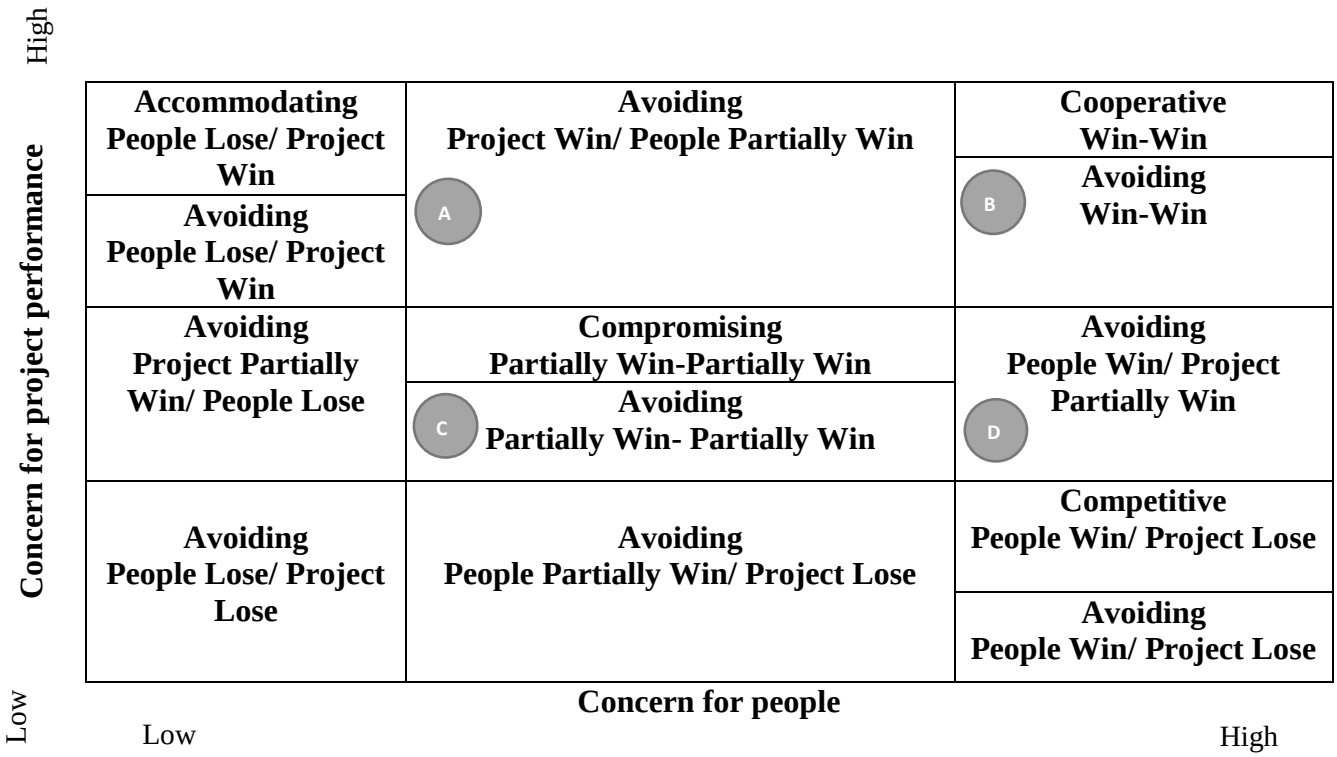

Figure 3- Possible outcomes for people and project from five conflict management styles

Table 1- Common Method Variance

Construct	Item	Loading	AVE	CR
Accommodate	Accom1	0.5639	0.5647	0.8339
	Accom2	0.6625		
	Accom3	0.9121		
	Accom4	0.8186		
Avoid	Avoid1	0.7223	0.5311	0.8189
	Avoid2	0.7824		
	Avoid3	0.6986		
	Avoid4	0.7089		
Competitive	Comp1	0.8344	0.5571	0.8334
	Comp2	0.7104		
	Comp3	0.7464		
	Comp4	0.686		
Compromise	Compro1	0.8217	0.8105	0.9028
	Compro3	0.8297		
	Compro4	0.8978		
Cooperative	Coop1	0.7698	0.5045	0.7891
	Coop2	0.6545		
	Coop3	0.6982		
	Coop4	0.6553		
Team Performance	PER1	0.6771	0.5269	0.8988
	PER2	0.7675		
	PER3	0.6978		
	PER4	0.6805		
	PER5	0.7638		
	PER6	0.6953		
	PER7	0.7222		
	PER8	0.7931		
Team Coordination	TeamCo1	0.798	0.5044	0.7947
	TeamCo2	0.6769		
	TeamCo3	0.603		
	TeamCo4	0.7205		

CR = composite reliability; AVE = average variance extracted

Table 2- Correlations among Constructs

	Accommodate	Avoid	Competitive	Compromise	Cooperative	Performance	Team Coordination
Accommodate	**0.7523***						
Avoid	0.5297	**0.7288***					
Competitive	0.4426	0.5145	**0.7473***				
Compromise	0.526	0.4361	0.4858	**0.9003***			
Cooperative	0.192	0.1147	0.1467	0.0536	**0.7173***		
Performance	0.1306	0.297	0.2896	0.2297	0.2524	**0.7258***	
Team Coordination	0.2352	0.3075	0.265	0.2027	0.6499	0.3492	**0.7102***

*Square root of the AVE on the diagonal

Table 3- Total Effects

	Beta Value	**t-value**	**P-value**	**Standard Error**
Accommodate -> Performance	-0.0088	0.2583	0.796	0.0339
Accommodate -> Team Coordination	-0.0251	0.2809	0.779	0.0894
Avoid -> Performance	0.302	2.3387	0.019	0.0352
Avoid -> Team Coordination	0.236	3.4346	0.0006	0.0687
Competitive Conflict -> Performance	0.0036	0.1091	0.913	0.0334
Competitive Conflict -> Team Coordination	0.0104	0.1201	0.904	0.0869
Compromise -> Performance	0.0138	0.3772	0.706	0.0367
Compromise -> Team Coordination	0.0396	0.4207	0.674	0.0942
Cooperative Conflict -> Performance	0.107	4.1009	*******	0.053
Cooperative Conflict -> Team Coordination	0.6262	10.8735	*******	0.0573
Team Coordination -> Performance	0.3492	4.4469	*******	0.0785