

## Human Oriented Determinants Influencing Multi-Organisational Team Integration in Construction Project

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**Abstract:** Recently, the fragmentation of the construction industry has led several construction industry groups across the regions initiated the concept of team integration as project delivery strategies to improve the project performance. This study conducts a review of the literature to identify Key Determinants (KDs) of multi-organisational team integration in construction projects. The review identified 4 main KDs namely commitment, culture, collaboration and experiences which are considered vital to the multi-organisational project team within construction projects. These determinants can be classified as human oriented determinants due to the nature of relationships embedded within the integration practice. Conceptual framework of human oriented determinants is then developed in order to provide a point of reference for construction organisations to embrace the integration practice within the context of human relationships.

**Key words:** Construction projects, human oriented determinants, multi-organisational, team, integration

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### INTRODUCTION

In the global economy, the construction industry is one of the most challenging due to the fragmented approach that contribute to the unsuccessful project delivery. One of the possible reasons was due to the various parties in the project did not cooperate and collaborate effectively in delivering the projects (Evbuomwan and Anumba, 1998). Referring to the results of previous studies (Evbuomwan and Anumba, 1998) traditional approaches have been acknowledged as contributing to several problems such as professional isolation, lack of co-ordination, working individually cause inefficiency to the project. Recognizing this gap, several construction industry groups across the regions initiated the concept of team integration as project delivery strategies to improve the project performance. Team integration is vital for multi-organisation in the construction industry due to relationships and collaborative principles that flows through different levels of organisations and between individuals and team (Moore and Dainty, 2001). Thus, this study presents a critical review on human oriented influencing the multi-organisational team integration in construction projects.

**Problem formulation:** According to the previous scholars (Ibrahim *et al.*, 2013; Cicmil and Marshall, 2005), the

traditional procurement approach is the major influence to the fragmentation of the project delivery. Several strategies are focused on integration, coordination and communication between the various fields in a project needs to be improved. All these problems contribute to the causes and effect of the fragmentation in the construction industry. The traditional approach is the design and construction process has to be carried out in a sequential manner that follow throughout the life cycle of the project. This approach has resulted in many problems related fragmentation such as professional isolation, lack of coordination between design and construction phase (Cicmil and Marshall, 2005; Dainty *et al.*, 2001). There is a different person with different expertise, different styles of working and then that makes it difficult to integrate while integration is vital important to process essentially to high-performance teams in multi-organisational. A crucial issue with multi-organisational collaboration therefore is the possibility of clashing interests in parties. In a multi-organisational project each party is an independent company with its goals (Artto *et al.*, 2008). Thus each party has its own interest as well as its own perspective on the interests of the others (Mollaogul-Korkmaz *et al.*, 2013). In the earlier literature project delivery for integration does not fully describe and give sufficient information to underlying determinants that may explain the collaboration between multi-organisation of the

performance team in differences across method is very important and should be integrated to ensure the success of a project. Integration is reflected in the team's participation in high-quality interactions, including BIM, design charrettes, joint goal-setting, physical co-location and off-site prefabrication (Latham, 1994). Although, many studies in integration have been done there are still a lack of literature in a multi-organisation. Perhaps, previous studies only focused on specific procurement (Baiden *et al.*, 2006) focused on specific latent factor and focused on the construction process in specific country (Love *et al.*, 2010; Ali *et al.*, 2013). Multi-organisation team integration in this context is defined as the extent to which team members from different organisations were brought together in a systematic manner to deliver a specific project.

## MATERIALS AND METHODS

Initially, this study is relevant to multi-organisational team integration in construction projects published in the following nineteen leading construction management journals were considered namely ASCE Journal of Construction Engineering and Management (CEM), Construction Management and Economics (CME), International Journal of Construction Management (IJCM), International Journal of Managing Projects in Business (IJMPB), International Journal of Project Management (IJPM) team performance management. The selection of these journals was based on their influence in the area of project management based on (Jorgensen and Emmitt, 2009) ranking of international journal of project management and more recently their inclusion in the top-tier leading construction report study according to Egan. Articles published in these journals from 1998-2016 were included in the literature search. Consequently, in order to achieve the scope of the study, a more focused search was carried out using 5 specific keywords; team integration, integrated project delivery, integrated team practice, construction projects, collaboration and multi-organisation.

## RESULTS AND DISCUSSION

**Review of Key Determinants (KDs) of multi-organisational in team integration:** Following in this literature review, 27 retrieved journals, studies and research reports related to the team integration were selected for further detailed review. The review of the multi-organisational in team integration in the context of

the definition recommended by Baiden *et al.* (2006) as the introduction of working practices, methods, attributes and behaviours. This approach is creating a culture of effective and efficient cooperation of the various individuals and multi-organisations. However, it acts as the potential key performance determinants to evaluate the performance of the construction companies. Table 1 shows the multi-organisational team integration with that will be success with this four KDs as follows.

**Commitment; creation of single co-located and top management:** Commitment in the context of the construction is in full support of the responsibility to ensure that the team members work together to achieve the goals or objectives. On occasion, the top management plays an important role in inspiring team members to work extra. Tasks allocated to individual members of the team should be meaningful and challenging 'people work better if the tasks they face are interesting, motivating and enjoyable' (Dainty *et al.*, 2001; Moore and Antill, 2001a, b; Baiden and Price, 2011) agreed that creation of single team location as one fundamental indicators and needs to be brought together from the beginning of the project and vital importance such in many ways as well as commitment from the top management. In addition, commitment from top management itself encouraged due to the changing of the process of empowerment and coordination as well as helping in establishing the effectiveness of organisations and procedures for the construction projects for example the proportion usage of team participating in Building Information Modelling (BIM) planning, design charrettes, goal setting and colocation during the construction (Mollaogul-Korkmaz *et al.*, 2013; Kajewski *et al.*, 2003). As such senior management should support in various environments, act as exemplars of the good behaviour practice, give fully commitment and collaboration prior to establish the effective team working ethics (Forgues and Koskela, 2009; Rahman and Kumaraswamy, 2008). Otherwise, by sharing information within team will increase collaboration (Baiden *et al.*, 2006) as well as prior to get the suitable identification in decision making throughout the single project team so can understand better the terms of project team work in different environment geographical, social and cultural (Jorgensen and Emmitt, 2009). Additionally, project teams will integrate effectively, work collectively as well as build a relationship throughout enables project by locating together at the same office (Ibrahim *et al.*, 2013; Aapaoja *et al.*, 2013; Nawi *et al.*, 2014). All these criteria

Table 1: People oriented management style matrix

Main Key Determinants (KDs)	Commitment		Culture		Collaboration		Experiences		Total No. of KDs for each author
Key determinants of team integration practice (author/year)	Creation of single team location	Top management	“No blame” culture	Trust and respect	Client care team	Operates without boundaries	Collective Understanding	Encouraging initiative	
Evbuomwan and Anumba (1998)									2
Dainty <i>et al.</i> (2001)									4
Moore and Antill (2001)									3
Moore and Dainty (2001)									4
Anumba <i>et al.</i> (2002)									4
Kajewski <i>et al.</i> (2003)									4
Cicmil and Marshall (2005)									3
Baiden <i>et al.</i> (2006)									5
Rahman and Kumaraswamy (2008)									4
Jorgenson and Emmitt (2009)									4
Forgues and Koskela (2009)									5
Godfrey and Price (2009)									4
Love <i>et al.</i> (2010)									3
Baiden and Price (2011)									4
Korkmaz <i>et al.</i> (2013)									1
Aapaoja <i>et al.</i> (2013)									5
Ibrahim <i>et al.</i> (2013)									8
Nawi <i>et al.</i> (2014)									3
Ibrahim <i>et al.</i> (2015)									4
Franz and colleague									3
Total No. of Hits for the same KDs	11	13	5	11	4	14	14	5	

have an important role of increase the integration process and the transparency of the process benefits for all team members with a high level of leadership from top management and direct participation (Ibrahim *et al.*, 2013; Dainty *et al.*, 2001; Anumba *et al.*, 2002).

**Culture; “no blame” culture and trust and respect:** Culture is the manifestations of human intellectual achievement regarded collectively. In this context, different cultural views and opinions among team members are inevitable, especially working in multi-organisations in team integration. Preferably, the dissent is so nice to share a wealth of expertise, ideas, experiences, values and priorities as a source of energy and opportunities for creative problem solving. It also emphasizes that no blame culture is a way to integrate people to admit their mistakes and learned from them (Table 1).

So, collective responsibility in decision making achieved the best for the project as well as encourages the project teams to develop innovative ideas (Dainty *et al.*, 2001). Thus, it is important to have fair relationship and acknowledge human fallibility that encouraged the project team joint the resolution of problems, work together in a spirit of cooperation and collaboration. Moore and Dainty (2001), Ibrahim *et al.* (2013), Dainty *et al.* (2001), Baiden *et al.* (2006), Forgues and Koskela (2009) and Aapaoja *et al.* (2013), outlined that trust and respect are important for a construction project to build trust, understanding with

their colleagues and respect the entire teams before the successful completion of projects of modern construction. This is shown in a study by Ibrahim *et al.* (2013), Baiden and Price (2011) the failure of the delivery of information between the project team due to a lack of trust between the parties involved in the construction process. Cicmil and Marshall (2005), Rahman and Kumaraswamy (2008) and Anumba *et al.* (2002), outlined that a bad influence on the development of an integrated team happens when a lack of trust in turn causes tension and problems among the team members.

**Collaboration; client care team and operates without boundaries:** Construction is an activity that requires collaboration of teamwork, accumulated knowledge and experience of many people. But simply bringing people together does not necessarily guarantee the project will function successfully and effectively as a team without an effective integration of team work. By developing a client care team is to oversee the expectations of the client and end-users throughout the construction project and play an important role prior to satisfy the needs and expectations of the users (Forgues and Koskela, 2009). Otherwise, to ensure the objectives are delivered where appropriate helping end-users or stakeholders to understand where and why some objectives cannot be met such as budget, time, sustainability and etc. (Ibrahim *et al.*, 2013). Many researchs (Moore and Dainty, 2001; Artto *et al.*, 2008; Baiden *et al.*, 2006; Love *et al.*, 2010; Moore and Antill, 2001) identified operates without boundaries is one aspect shows act collaboratively,

efficiently and sharing the knowledge, skills and expertise prior to make it beneficial outcomes for the project. As described by Moore and Dainty (2001), Anumba *et al.* (2002), the existence of professional boundaries in a team-oriented projects within the project team contributing to problems in construction projects. For example, (Ibrahim *et al.*, 2013) suggested that establishing the identity of the organization or operation without borders can show that they are part of an integrated and joined the team thought would lead to mutual benefit for construction projects.

**Experiences collective understanding and encouraging initiative:** Through the construction context, the skills and knowledge gained from the construction projects that enhances the organisation’s ability to retain their competitive advantage and also stay ahead when faced with their competitors. It shows that various organisations in the integration team can generate knowledge and facilitate the sharing of knowledge and presenting the new ideas concerning project delivery as well as innovations (Aapaoja *et al.*, 2013; Nawi *et al.*, 2014). In generating the knowledge, the team member sharing their own perspective and ideas towards achieving the common goals involves the continuous alignment of the diverse disciplines (Ibrahim *et al.*, 2013, 2015; Forgues and Koskela, 2009). This is a great way to get a significant individual contribution either on a personal level or at the level of the multi-organization with supported by the appropriate way of communication and decision-making tools (Baiden *et al.*, 2006; Anumba *et al.*, 2002). Same goes to encouraging initiative whereby the majority of the authors viewed it is the way to generate new ideas from the project team and show the level of commitment in building and contribute to the delivery process (Jorgensen and Emmitt, 2009; Aapaoja *et al.*, 2013). The team members should be realistic in a way of thinking about where they can take risks and where they can apply their initiative whereby can contribute in a positive way to the project ahead. In addition, that project team members should work closely together, in order to create an effective interaction and chemistry between collaboration team, so that initiatives effort within a particular project can be coordinated with a variety of ideas generated (Ibrahim *et al.*, 2013, 2015; Medlin, 2006).

**Conceptual framework of human oriented determinants in team integration:** Recognizing this gap in knowledge, the researchs endeavour to model the concept of human oriented determinants as shown in Fig. 1 influencing the multi-organisational team integration to better understand its role in construction project. As described by Baiden *et al.* (2006), the conceptualization of an integrated

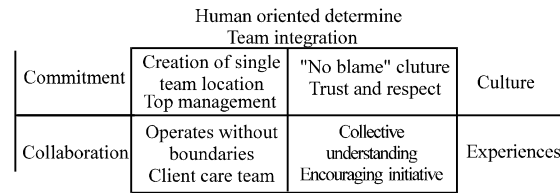


Fig. 1: Conceptual framework

team in construction defined integration as the “combination of different disciplines or organizations into a single cohesive and mutually supporting unit with alignment of processes and cultures.” The concept of human-oriented is because they all work together in a group with fewer boundaries, team members are theorized to be more collaborative and willing to interact with people outside their own organization. The concept of human oriented, suggests the existence of identity in the individual is not bound by different goals and scheme of the organisation but also jointly develop to have greater culture, commitment, collaboration and experiences of project goals. All KDs is categorized as human-oriented determinants in team integration as it develops and join together into a single unit with a common culture and is an important step for the new team to achieve integration.

**CONCLUSION**

Performance team integration is one of the important aspects towards a successful construction project. This study relying on a review of the national and international literature, 8 sub Key Determinants (KDs) classified under four KDs perspectives was identified as human oriented determinants in team integration for construction projects. On the future research team integration influenced by the type of the project delivery in construction and conducted to standardize the KDs with more details as well as to test the KDs in the countries that still not in advanced in procurement on team integration practice.

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