



The Effect of Transformative Interactive Capability on Team Performance: An Empirical Investigation

Ika Nurul Qamari^a, Mohsin R. Shaikh^b, Udin Udin^c, ^{a,c}Universitas Muhammadiyah Yogyakarta, Yogyakarta, Indonesia, ^bZeal Institute of Business Administration, Computer Applications and Research, Pune, India, Email: ^aika.nrq@umy.ac.id, ^cudin.udin@umy.ac.id

The phenomenon of mergers, acquisitions, global competition, and new technology is a driving force that demands rapid transformational change for organisations. Management, scholars and consultants have to strive to find the most effective approach to transforming organisations. The purpose of this paper is to investigate the effect of transformative interactive capability on team performance. The results of the study reveal that transformative interactive capability (i.e., sensemaking, building, transformative learning, and knowledge-creating) has a significantly positive effect on team performance. This study also evaluates the application of transformative interactive capability and highlights how its dimensions contribute to improving team performance.

Key words: *Transformative interaction capability, sensemaking building, transformative learning, knowledge-creating, team performance..*

Introduction

Teamwork is one organisational requirement that is always used to manage and weather change. The transformations taking place in organisations are increasingly attracting researchers and is reflected in the expansion of theories to do with team functions and dynamics. Several empirical studies and literature reviews are currently developing and focus on team performance (Ceschi, Dorofeeva, & Sartori, 2014). This is also reflected in the shift in the team's research locus. Historically, study of small groups has focused on the science of



social psychology (Ahmad & Ahmad, 2018). However, teams have shifted this concept of sustainability into the fields of psychology and behaviour of the organisation.

Carless & De Paola (2000) focus on organisational research by assigning processes to a team, which relatively focused on interpersonal interest and interaction in small groups. Researcher defined a team as a group of people who interact dynamically, are interdependent and are adaptive to the goals/objectives/mission of the organisation (Salas et al, 2014, Ahmad & Ahmad, 2018). From the literature, a shift in team organisation, for example a decision making, virtual or leadership team is apparent. Over the decades, theories of and research on team effectiveness have continuously broadened the scope and depth of team diversity, multi-team systems, team learning, and macro recognition. Studies have concluded that there is substantial knowledge that can be drawn on to improve the effectiveness of team performance. However, fundamental questions are still poorly studied and difficult to understand. Therefore, this study will examine the concept of transformative, interactive capability as a catalyst to improve team performance.

Literature Review

Transformative Interaction Capability

The concept of transformative interaction capability is a derivation of human capital and transformation theory and comprises transformative interaction and capability elements. It is derived from and inspired by the concept of human resource capability, capability approach, transformative learning, transformational change and transformative interaction by adopting Theory of Time, Interaction, Performance (TIP) from McGrath (1991). Literature search results imply that the concept of transformative interaction capability is developed with three dimensions: building sense-making by empowering ideas at work and complementing competencies, transformative learning utilising active interaction in learning and future-oriented, knowledge creation by developing knowledge and new competencies. Collaborating to produce integrated knowledge is also a feature of this process.

a. Sensemaking building

Sensemaking is a process whereby individuals work to understand the demands of the external environment. When members of an organisation face moments of ambiguity and uncertainty, they attempt to clarify what is happening by extracting and interpreting cues from their environment. This acts as a basis for order and "understanding" what has happened and allows them to adjust to the new environment.

According to Maitlis and Christianson (2014), sensemaking focuses on how people construct what they interpret. Interpretation assumes an existing framework of meaning and only needs to connect new cues. It also assumes that someone is aware of the need for interpretation. If

there is no clear relationship between cues and frames, sensemaking is required. Sensemaking is defined as the process by which companies can interpret and acquire information about their environment. Similarly, sensemaking is a process of turning a situation into one that is understood explicitly in words and functions as a stepping stone to action (Weick, Sutcliffe, & Obstfeld, 2005). Sackman's study (1991) express that sensemaking is a set of mechanisms that define organisational standards and rules for understanding, interpreting, trusting, and acting. Organisational sensemaking is multidimensional based on mutual understanding of meaning and action. More simply, sensemaking is the process through which an organisation understands and interprets environmental change so that it can adapt to the environment.

Neill, McKee, and Rose (2007) show that sensemaking, when developed, increases the range of potential strategic responses and whose goal is to improve customer-based performance. In his study, Neill uses the term sensemaking capability which is the company's ability to anticipate and respond to changes that occur and comprises three characteristics, namely communicative, interpretive and analytical. Communication is the ability to exchange information, interpretive is the ability to assimilate diverse environments simultaneously; analytical is the ability to analyse through perspective.

(Ahmad & Ahmad, 2018) explain sensemaking as the team's ability to interpret, understand, and construct meaning in project information, technology, and market-related fields. With this ability, they are able to act on that information to complete projects with success. Akgün reveals that sensemaking capabilities helping teams to identify recurring events in order to identify predictability. Additionally, they are able compile information collected so as to determine meaningful patterns in customer and sectoral trends and competitor strategies. Teams' sensemaking forms a body of knowledge about activities related to projects and, in this way, helps teams to share information. Information is summarised with all team members and incorporates competitor-customer information, tacit knowledge, technological competencies, insights and ideas into in the concept of a new product. With the explanation above, there are two indicators in building sensemaking: mutually empowering ideas to interpret an organisation's needs and the complementary needs of the team.

b. Transformative learning

When faced with a reluctance to change, transformative learning is defined as a process by which individuals work to realise new things or events by interacting positively with each other. In this sense it is necessary to carry out active learning interactions and share knowledge, experience, and skills to adapt to the environment. Transformative learning (Mezirow, 2006) is defined as the process by which we change problematic terms of reference (mindset, thinking habits, the perspective of the meaning) about a series of assumptions and expectations to make them more inclusive, discriminatory, open, reflective



and emotionally friendly. Such a framework is more suitable as it produces trust and opinions that correctly and justifiably guide action.

Illeris (2017) explains transformative learning as learning involving qualitative changes in students' "meaning of perspective", "terms of reference" or "habits of mind", namely cognitive structures that govern our understanding of ourselves, our lives and the world in which we live. It emphasises the central role of critical reflection and open discourse in relationships and the importance of applying new insights into practice. In a world of academics and professionals, transformative learning aims to create new understandings through the practice of advanced learning. This is increasingly needed by individuals, teams, as well as companies and communities and comprises three basic dimensions of learning: cognitive, emotional, and social.

Transformation means change or change into something qualitatively different. So transformative learning is learning that implies a formation or new qualitative capacity in learning. The term involves recognising that learning is something more than the acquisition of new knowledge and skills; it stands in contrast to what is often an implicit understanding of the relationship to school and education. For example, learning may, in many situations, include changes and transformations in students' general experiences and behaviour, but the expression of transformative learning does not in itself indicate what is transformed and how it happens. Critical reflection in transformative learning requires an understanding of the nature of reason and its methods, logic and justification. Transformative learning is metacognitive reasoning that involves the same understanding but emphasises insights about the source, structure and history of terms of reference. It also assesses relevance, suitability, and consequences (Mezirow, 2003).

Hoggan (2016) confirms that transformative learning refers to processes that produces significant and irreversible changes in the way a person experiences, conceptualises and interacts with their environment. The descriptor "experience, conceptualisation, and interaction" shows how the transformative results can affect a person. This study considers transformative learning as a dimension of transformative interaction capability. With regards to Hoggan's study, producing significant change requires experience and conceptualisation and is oriented towards the future. For transformation to occur, interaction must be present as it is necessary to be active in learning. There is a mutualistic role carried out by each individual in a team or group as well as in the organisation. Transformative learning comprises two indicators, namely active learning and futures oriented.

c. Knowledge creating

Knowledge creating takes place in the face of a knowledge gap and is owned by an organisation or working group. This activity creates knowledge through knowledge



conversion, development, and integration. For the creation of knowledge, organisations need (i) tacit knowledge, knowledge inherent in the expertise and experience of individuals and groups; (ii) explicit knowledge, knowledge that can be consumed, understood and imitated or implemented in the form of information, regulations or procedures and; (iii) cultural knowledge, expressed in assumptions, beliefs, and norms used by members of the organisation to determine the value and importance of new information or knowledge.

Knowledge creation helps companies develop new products and services to quickly respond to market needs (Hong, Lee, & Suh, 2016). Organisational knowledge is usually compiled through collective efforts in teams, for example, service development teams. Previous research shows that team-level knowledge positively impacts aspects of organisational performance in terms of product development, customer relationship management and revenue. For this reason, it is vital to strengthen the process of creating team knowledge to improve organisational performance (Chae, Seo, & Lee, 2015).

Performance

The term 'performance' is discussed by J. P. Campbell, McHenry and Wise (1990) as observable things that people do (i.e. behaviour) that are relevant for organisational goals. Behaviour that shapes performance is rated on a scale representing the level of performance accomplished. Furthermore, individual performance behaviours exhibit sufficient patterns of variation. There is no one result, factor or thing that can be shown and labelled as work performance. Work performance is truly multidimensional. A distinction is also made between performance and performance results which J. J. Campbell, Dunnette, Lawler, and Weick (1970) call effectiveness.

Performance is also often related to the achievements or levels of success of individuals, groups, or organisations (Serey, 2006). Performance can be known if individuals, groups or organisations have set success criteria, shaped by specific goals and targets. Individual performance is the level of attainment from the objectives to be achieved or tasks to be carried out within a certain period. Group or section performance is a description of the level of achievement or implementation of a strategic activity, program or policy in realising the goals, objectives, mission and vision of an organisation.

Team performance is defined as the extent to which a team achieves predictable goals or the quality of the expected task. Conceptually, teamwork is team performance that includes a set of interrelated cognitions, attitudes, and behaviours that contribute to the dynamic process of performance (Salas, Cooke, & Rosen, 2008). Studies reveal several factors of team performance (Mesmer-Magnus & DeChurch, 2009; Wu & Chen, 2014), namely: (i) the identity of roles and commitments of each member, (ii) team cohesiveness, (iii)

communication mechanisms and quality of information sharing, (iv) homogeneity of members for team goals and; (v) consensus among team members towards the goal. If these factors are in place, team performance is often improved. Team performance depends on the effectiveness of teamwork and strongly supports that the effective sharing of information between team members increases performance and productivity through interaction.

Transformative Interaction Capability and Teamwork Performance

Companies that emphasise human resource development find that their employees are more productive and meaningfully participate in corporate learning activities. A study conducted by Hatch and Dyer (2004) states that companies that can identify employees with talent, aptitude and skills who contribute to specific human capital, provide higher performance.

The results of Lahiri and Kedia (2009) confirm the importance of intangible assets as a significant determinant of company performance. The greatest influence of human capital shows that the quality of employees is most important in achieving the desired level of performance. The significant influence of organisational capital shows that basic knowledge embedded in the company, along with existing systems, processes, and culture are also important determinants of company performance.

In a team, interpretation, understanding and meaning building are needed for team activity, both in a project and using new technology to understand the latest information. The team will act based on information to identify everything that is encountered. They can predict and compile that same information to create meaning for a more strategic output and outcome. Meaning is the value of goals or work goals and concerns individual ideals or standards. Meaning involves a match between the requirements of work, beliefs, values and behaviour.

The study of Giuliani (2016) explains that the development of Intellectual Capital (IC) projects requires the development of intense sensing activities. In this sense, organisational managers need: (i) to understand new objects and managerial practices and their consequences and, (ii) diffuse IC and its measurement in an organisation. IC project development can be seen as a series of micro sensemaking processes (guided, fragmented, restricted, etc.). Each of these processes can lead to different results from IC measurement practices; so, the outcome of the project depends on the particular type of sensemaking/sense giving adopted at each phase. Finally, this research underscores the relevance of "leaders" in the development of the IC manufacturing process and related outcomes. Wang (1999) explains the conditions for mutual empowerment, namely mutually reinforcing interactions, in this case, between the organisation and its members which is most likely to occur when there is coherence and cooperation to find common goals. Therefore, the achievement of shared empowerment is achieved by strength in terms of cohesiveness, level of awareness



and the organisation of social groups. Most importantly, achievement is gained by the convergence or divergence of the goals of elite sections and well-organised social groups.

This discussion emphasises that managers or team leaders need to communicate to employees the value of learning from mistakes as an important part in improving and changing existing organisational practices. This shows that the ability of interaction is mutually empowering and, by changing power, will improve team performance. Thus, the following hypothesis is proposed:

H1: That transformative Interaction Capability significantly affects team performance.0

Methodology

This study was carried out in a Muhammadiyah-owned business services company. It consists of banking, printing, publishing, training, event organising, outsourcing, project management and financial institutions. Research subjects were newly formed strategic, operational product development teams. The sample selection technique uses complex probability sampling using an area sampling technique. The respondents were supervisors (section heads, section heads, division heads), managers, directors and strategic staff involved in the team. Each respondent is a team member. 300 questionnaires were distributed to the Special Region of Yogyakarta and Central Java in Indonesia. 285 questionnaires were returned but only 253 questionnaires could be processed.

The ability to interact with change is measured by three dimensions, each with two indicators, namely: (1) sensemaking building adopted from Akgün et al. (2012): (i) our team empowers ideas at work, (ii) our team interacts to complement each other's competencies and; (2) transformative learning from Hoggan (2016): (i) our team interacts actively in learning, (ii). our team always increases the capacity of future-oriented thinking. Knowledge-creating is taken from (Chae et al., 2015) and is the third dimension: (i) our team interacts to develop new knowledge and competencies and, (ii) our team collaborates to produce integrated knowledge. Team performance was measured by four questions consisting of (i) our team completes work on time, (ii) our team solves problems quickly, (iii) the results of our team's work are of high quality and, (iv) the collaboration of our team always works efficiently (Lin, 2010; Liu, Liu, Ding, & Lin, 2014). Questionnaire statements are made on a scale of 1 to 10 where a response to the left is strongly disagree and more to the right, a response that is rated as strongly agree.

Results and Discussion

Data was analysed using Structural Equation Modelling (SEM). The results of data processing can be seen in Figure 4 below and shows that the ability of interaction to empower change has a significantly positive effect on team performance. The goodness of the fit test results shows that the Chi-Square value of 42,081 and a probability value of 0,161 and meets the cut of value $\geq 0,05$. These two assumptions already indicate that this model is robust. Furthermore, the results of the testing the model show that GFI = 0,968; AGFI = 0,949; TLI = 0,994; RMSEA = 0,031; CFI = 0,996; CMIN/DF = 1,238; PGFI = 0,599; PCFI = 0,752. All values meet the required cut. This means that the satisfactory fit research model meets the required criteria.

Table 1: Regression Test Results

Variables, Dimensions and Indicators			Estimate	S.E.	C.R.	P
TIC	→	TP	,715	,062	11,563	***
TIC	→	Sensemaking_Building	,952	,056	16,913	***
TIC	→	Transformative_Learning	1,027	,065	15,730	***
TIC	→	Knowledge_Creating	1,000			
TP	→	TP1	1,000			
TP	→	TP2	1,253	,084	14,967	***
TP	→	TP3	1,294	,082	15,695	***
TP	→	TP4	1,182	,082	14,447	***
Sensemaking_Building	→	TIC6	,927	,065	14,262	***
Sensemaking_Building	→	TIC5	1,000			
Transformative_Learning	→	TIC4	,985	,064	15,282	***
Transformative_Learning	→	TIC3	1,000			
Knowledge_Creating	→	TIC1	1,000			
Knowledge_Creating	→	TIC2	1,091	,064	17,015	***

The statistical results of testing hypothesis are presented in Table 1 above and show the estimated parameter value at 0,715, the standard error value at 0,062 and the critical ratio at 11,563 with a probability of 0,000. By using an alpha level (α) = 0,05, the results of this study conclude that the better the ability to interact with changeable power, the better the team performance.

This study aligns with previous studies and found that an important aspect for employee interaction is mutual support for each other through collegial and individual relationships. Homans (2013) explains that interaction is an action taken by an individual with another



individual and can be a stimulus for professional growth. Another feature is effective communication as successful interactions underscore effective relationships between two or more people. Collaboration can occur between individuals and groups or it can be a group with groups or individuals (Sandstrom & Dunn, 2014). Results also align with Kozlowski and Ilgen (2006) who found that teams are: (a) two or more individuals who, (b) interact socially, (c) have one or more shared goals, (d) are brought together to perform tasks that are organisationally relevant, (e) show interdependence with respect to workflows, goals and outcomes, (f) have different roles and responsibilities and, (g) are combined in an organisational system. This organisational system includes limitations and interrelationships against a broader system context and task environment.

Conclusion and Recommendations

The results of this study contribute to the conceptual development of transformative interaction, especially in the areas of management and organisations that support the development of service businesses. Based on the results described above, this study focused work teams, group processes, group dynamics, group learning, behavioural and attitude change and decision making. In this study, team performance appraisal uses self-reported or self-performance measurement indicators, where respondents assessed team performance based on perceptions and subjectivity. Future studies need to consider elements of assessment from other parties, in the form of dyadic research, so as to provide more comprehensive results.

In general, the results of this study complement the perspective of Joseph E. McGrath's TIP Theory on groups and group activities. The morality and complexity of the nature of groups in organisational life are explained by their patterns and functions. With respect to group patterns, a process of beginning, problem-solving, conflict resolution and execution takes place. Three other processes explain group function, namely: production, welfare, and member support. In production, the execution is performance; for welfare the execution is interaction and the support of members for the execution is participation. The results of this study also align with Hong et al. (2016), Kleinsmann, Buijs, and Valkenburg (2010), Mesmer-Magnus and DeChurch (2009) who found the role of team members' interactions to impact on performance. In particular, the concept of transformative interaction in organisations is a complex responsive process where people create organisational practices through dynamic, micro-level interactions. The concept of changeable interaction capability enriches and supports resource advantage theory, the role of resources and capabilities and TIP theory.



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