

Improving Teamwork Performance: An Empirical Study of Service Industry in Indonesia and Malaysia

¹ Ika Nurul Qamari, ² Syadiyah Abdul Shukor

¹ Universitas Muhammadiyah Yogyakarta, Indonesia, ² Universiti Sains Islam Malaysia

Abstract: *Team cohesion has an important role in improving team performance. The literature review carried out shows differences in results, therefore giving rise to a research gap. This study aims to prove empirically the role of new concepts of transformative interaction capability to drive team performance in service industries in Indonesia and Malaysia. A model with empirical testing that fills the gap between team cohesion and team performance. This study presents variables: team cohesion, transformative interaction capability, and team agility that encourage to improve team performance. The research questionnaire was distributed to supervisors, managers, directors, and strategic staffs involved in the new product development team. The sampling technique used the area sampling design method, and 263 questionnaires were processed, with analysis techniques using Structural Equation Modeling (SEM).*

Index Terms: *team cohesion, transformative interaction capability, team agility, team performance, service industries.*

I. INTRODUCTION

Teams are organizational needs that are always used to deal with organizational change. Transformation that takes place in work organizations, increasingly attracts the attention of researchers and is reflected by the expansion of theories that discuss team functions. A number of empirical studies and various literature reviews written on developing research are currently focusing on work teams [1]. This is also reflected in the shift in the team's locus of research. For most of its history, research on small groups has focused on the science of social psychology [2]. However, group research and teams have migrated substantially to the field of organizational psychology and organizational behavior. Carless and De Paola [3] documented the emphasis of organizational research on the assignment process on a team, relative to the small group focus on interpersonal interests and interactions. Teams are defined as a group of two or more people who interact dynamically, are interdependent, and adaptive to the goals/objectives/mission of the organization and are valued [4]. From various literature focused on a shift in teams within organizations, for example in virtual teams, leadership, and decision making began to emerge. Since 2003, the field of theory and research on team effectiveness has continued to expand its scope and depth with topics that focus on, for example, team diversity, multiteam systems, team learning, and macro introduction. Various developing studies lead to the conclusion that there is a wealth of actionable knowledge available to increase the effectiveness of work teams in organizations. However, the answers to many fundamental questions are still under-studied and need to be deeply understood. This study aims to prove empirically the role of transformative interaction capability which is able to support team performance and will examine how the concept of transformative interaction capability in a team is a driver to improve team performance.

II. LITERATURE REVIEW AND HYPOTHESIS

A. Team Cohesion (TC)

Team work has become a key element in change management and one of the most important components of effective teamwork is cohesiveness [5]. The concept of group cohesiveness was pioneered by Kurt Lewin in 1943 who revealed that a group's strength was to maintain the integrity and unity of group members. The team is a group that has a specific purpose. Team cohesiveness reflects the extent to which members commit to each other in achieving team goals [6] [7].

B. Team Performance (TP)

Performance is the realization of an achievement or the level of success of individuals, groups, or organizations. Performance can be known if individuals or groups or organizations have established success criteria, both from specific goals and targets achieved. Several studies reveal about the factors of team performance [8] [9], including: 1) identity of the roles and commitments of each member, 2) team cohesiveness, 3) communication mechanisms and quality of information sharing, 4) member homogeneity, and 5) consensus among team members towards the goal approach. Therefore team performance is often improved. A good team is a team that has good cohesiveness, therefore it will have an impact on team performance.

Hypothesis 1: Teams that have good cohesiveness will have a positive effect on team performance

C. Transformative Interaction Capability (TIC)

In a team, team members interact with each other in conversation, so they understand their environment, coordinate their activities, dream about new possibilities, and mobilize energy in the form of collective action [10]. Transformative interaction capability is the ability to interact with team members that encourage personal capacity development, build organizational added value by empowering ideas in work, complementing competencies, active in learning, future oriented, developing new knowledge and competencies, and collaborating to produce knowledge integrated.

Transformative interactions will occur when team members mutually understand each other, and have the power to support each other in achieving goals. In other words, the cohesiveness of the team will encourage transformative interaction capability.

Hypothesis 2: Teams that have good cohesiveness will have a positive effect on transformative interaction capability.

Transformative Interaction Capability has the potential to improve team performance. Team performance depends on the effect of team work which strongly supports the idea, that effective information sharing between team members improves performance and productivity through interaction. Research by Lahiri and Kedia [11] emphasizes the importance of intangible assets as a significant determinant of organizational performance. The biggest influence of human capital shows that employee quality is the most important in achieving the desired level of performance. The significant influence of organizational capital⁵⁸² shows that basic knowledge embedded in the company along with existing systems, processes, and culture are also important determinants of team performance

Hypothesis 3: The more intense transformative interaction capability will improve team performance.

D. Team Agility (TA)

The concept of Agility was first used by the Iacocca Institute (1991) in the United States, the concept of agility has roots in a time-based competition approach, fast-cycle innovation and intrapreneuring. According to McCann et al. [12] agility is the ability to move quickly, flexibly, and decisively in anticipating, starting and exploiting opportunities and avoiding the negative consequences of change. The agile team is a team with characteristics: 1) always open to change, 2) actively scanning widely new information about what is happening, 3) smart in reading ambiguous and uncertain situations, 4) taking advantage of opportunities quickly, and 5) being good at spreading and diverting resources well to support the implementation of organizational tasks. The pattern of interaction within the team arises when team members coordinate with each other in their actions on the team. Interaction patterns will reflect the people in the team (their personalities and abilities), situations (tasks, pressure, and time), structures (rules, operating procedures, agreements, and norms), and leadership (control, respect, experience, feedback reverse, reinforcement, etc.) and facilities that may be available. An interaction pattern will arise when team members learn from each other's competencies, their respective behavioral tendencies and interests by observing the actual behavior inherent in team members [13].

Hypothesis 4: The more intense transformative interaction capability will improve team agility.

The results of the study by Hong, Lee and Suh [14] and Kleinsmann, Buijs and Valkenburg [15] explained that idea creation, active learning, and knowledge creation at the team level had a positive effect on team performance. The existence of an agile work team will encourage the organization to be agile so as to improve team performance.

Hypothesis 5: An agile team will have a positive effect on team performance.

III. RESEARCH METHOD

A. Research Method and Sampling

The object of this research is the service business, consisting of banking, printing, publishing, training, event organizing, outsourcing, projects and financial institutions. The research subject is a new product development team such as: budgeting team, business development team, graphic design team, product socialization team, system development team, work plan team and marketing strategy.

The sample selection technique uses complex probability sampling with area sampling design. The respondents are supervisors (section heads, department heads, division heads), managers, directors, and strategic staffs involved in the team. Each respondent represents a team. A total of 400 questionnaires were distributed to the Special Region of Yogyakarta and Central Java in Indonesia, and to Negeri Sembilan in Malaysia. In the Yogyakarta area the questionnaire was distributed directly by contacting the company. In Central Java, questionnaires are distributed through company directors, and some are sent via post due to the distance that is difficult for researchers to reach. While for the area of Negeri Sembilan using a mail survey.

B. Variable Measurements

583

Team cohesiveness are measured by four indicators [16]: Our team is always compact in performing team duties (TC1), Our team respects to social attractiveness (TC2), As a team we are freedom to express personal feelings (TC3), As a team we feel a sense of unity among team members (TC4). Transformative interaction capability are measured by six indicators [17], [18]: Our team empowering each other's ideas at work (TIC1), Our team interacts with each other competencies (TIC2), Our team interacts actively in learning (TIC3), Our team always improves thinking capacity front (TIC4), Our

team interacts to develop new knowledge and competencies (TIC5), Our team collaborates to produce integrated knowledge (TIC6).

Team performance is measured by 4 questions consisting of [19]: Our team completes work on time (TP1), Our team solves problems quickly (TP2), Our team's work is of high quality (TP3), Collaboration of our team always works efficiently (TP4). Indicators for agility teams are Liu, Liu, Ding and Lin [20]: Our team develops new skills quickly (TA1), Our team members are always responsive to changes in the needs of other teams in a timely manner (TA2), Our team is always responsive to changing organizational conditions (TA3), Our team members always responsive to the skills needed to change business processes quickly (TA4), our team builds functional cross-border cooperation effectively (TA5), our team is responsive to the needs of new IT (or software) skills quickly (TA6), our team members can switch to various projects (or missions) easily (TA7), Our team members are responsive in implementing new management skills (TA8).

Questionnaire statements were made on a scale of 1 to 10 which showed that the left to the left meant very disagree and the more to the right showed strongly agree.

C. Data Collection

The questionnaires distributed to subjects in Indonesia were 300 and mail surveys distributed to subjects in Negeri Sembilan Malaysia were approximately 100, resulting in a total of 400 questionnaires distributed. A total of 263 questionnaires returned with a response rate of 65.75%, containing 135 males (51,33%) and 128 females (48,67%). A total of 103 subjects (39.16%) were aged 30 to less than 40 years. In terms of education, most of the graduates were bachelor with 164 subjects (62.36%). The highest work period is 5 to less than 10 years as many as 96 subjects (36.50%). A total of 109 subjects (41.44%) were teams of 2 to 6 members.

D. Construct Validity and Reliability Testing

The results of testing the validity and reliability indicate that almost all indicators are declared valid and reliable. The results of validity testing have shown that almost all indicators produce a factor loading value above 0.6 [21].

Table 1. Scale indicators for measures

Reflective scale names and indicators (measured on 1-10 point)	Standardized factor loading
Team Cohesion (Cronbach's $\alpha= 0,913$)	
TC1	0,860
TC2	0,852
TC3	0,834
TC4	0,859
Team Performance (Cronbach's $\alpha= 0,909$)	
584	
TP1	0,780
TP2	0,853
TP3	0,900
TP4	0,848
Transformative Interaction Capability	

(Cronbach's $\alpha = 0,925$)	
TIC1	0,813
TIC2	0,844
TIC3	0,749
TIC4	0,820
TIC5	0,850
TIC6	0,854
Team Agility (Cronbach's $\alpha = 0,950$)	
TA1	0,830
TA2	0,838
TA3	0,874
TA4	0,815
TA5	0,863
TA6	0,514
TA7	0,896
TA8	0,869

Except only one indicator with a factor loading value of less than 0.6. Indicator TA6 has a factor loading value of 0.514 (factor loading < 0.6), which means that the indicator is statistically invalid. Therefore, the TA6 indicator is not included in the analysis. This can be seen from the critical number for reliability using Cronbach's alpha with rule of thumb ≥ 0.7 [22]. Table 1 presents the results of cronbach's alpha greater than 0.7, accordingly that all variables are categorized as reliable.

IV. DATA ANALYSIS AND RESULTS

Testing the data in this study uses the analysis of Structural Equation Modeling with the AMOS Program. After analyzing the model testing and looking at the cut of value from the assumptions SEM has shown that the value of the goodness of fit index for the criteria of GFI, AGFI, TLI, RMSEA, CFI, CMIN/DF, PGFI and PCFI contains the required values.

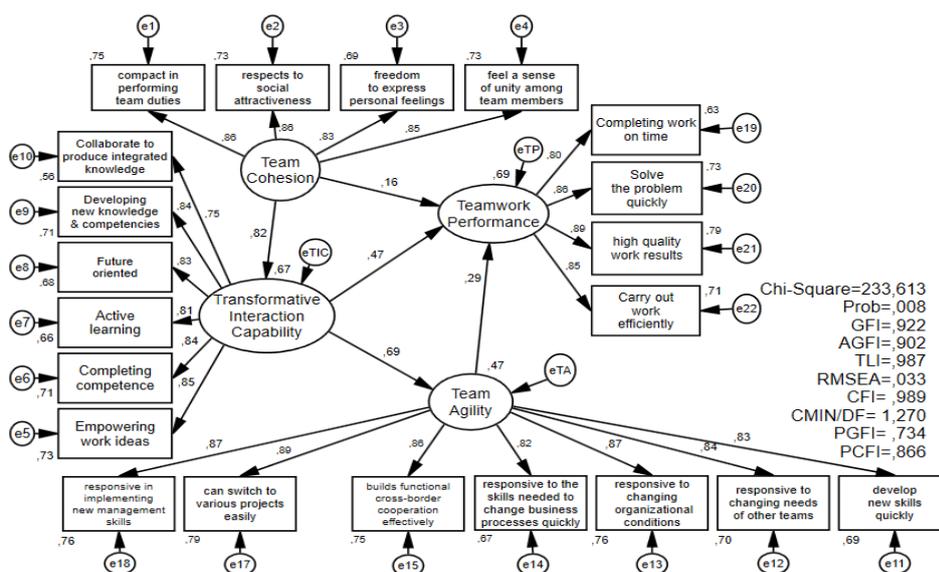


Figure 1. Result of Structural Equation Model

H1: The Cohesion team influences the team performance. Table 2 presents the structural path model which explains that there is no significant relationship between the two variables ($t = 1,855 < 1,96$). This can be seen from the significant value ($0.064 > 0.05$). Hypothesis 1 is not supported.

Table 2.

Hypothesis	Standardized path coefficients	t value	Prob .	Result
H1:T C → TP	,146	1,855	0,064	Not supported
H2:T C → TI C	,802	13,240	0,000	Supported
H3:TI C → TP	,430	4,509	0,000	Supported
H4:TI C → T A	,591	10,715	0,000	Supported
H5:T A → TP	,312	4,509	0,000	Supported

H2: Team cohesion has an effect on transformative interaction capability. Table 2 presents the relationship between the two variables, which the structural path model explains that team cohesion has a significant effect on transformative interaction capability ($t = 13.420 > 1.96$). This can also be seen from significant values ($0,000 < 0,05$) Hypothesis 2 is supported. H3: Transformative interaction capability has a positive effect on team performance. Table 2 shows the relationship of transformative interaction capability to team performance. The structural path model shows that transformative interaction capability has a significant effect on team performance ($t = 4,509 > 1,96$). This can also be seen from significant values ($0,000 < 0,05$). Hypothesis 3 is supported. H4: Transformative interaction capability has a positive effect on team agility. Table 2 presents the effect of transformative interaction capability on team agility, which results in structural path models showing that transformative interaction capability has a significant effect on team agility ($t = 10.715 > 1.96$). Significant value is also below the critical value of 0.05. Hypothesis 4 is supported. H5: Agility team has a positive effect on team performance. Table 2 presents the relationship between the two variables, which results in the structural path model showing that the agility team has a significant effect on team performance ($t = 4.509 > 1.96$). Significant value is also below the critical value of 0.05. Hypothesis 5 is supported.

V. DISCUSSION

For this study, we empirically examine the relationship between factors that improve team performance. Firstly, the results of the test data analysis showed different results about the influence of team cohesion on team performance. The results using SEM analysis turned out that the relationship between the two variables was not significant. This means that the better team cohesion does not improve team performance. The findings of this study are different from the results of previous studies. The results of the research from [23] which explains that cohesion will have a more significant effect on performance when conceptualized using social dimensions and tasks (but not others) and when the analysis is implemented at the team level. Research from Tekleab (2016) examines the relationship between cohesion and performance through learning, thus linking functional diversity with team learning. The study proposes that team cohesion will be positively related to team

learning which in turn will be positively related to team performance.

Secondly, other findings from this study prove that team cohesion has a positive and significant effect on transformative interaction capability. There is a significant positive influence from team cohesion on transformative interaction capability, which means that team cohesion is an important factor in transformative interaction capability. Good corporate organizations with team cohesion, which are characterized by teams that have cohesiveness in performing tasks, teams that are mutually interested in social attractiveness, teams that have the freedom to express personal feelings, active participation in community unity and professional behavior, will have the opportunity better transformation of interaction capability. Team cohesion is the life of the members of the organization and the team that turn on each other's work atmosphere so as to produce valuable work [24]. Thirdly, in testing confirmatory factors the indicators of transformative interaction capability have been proven conclusively as a measure of team performance. So that the relationship between transformative interaction capability and team performance illustrates the relationship between indicators of team performance variables, namely completing work on time, solving problems quickly, high-quality work results, carrying out work efficiently. The results of this study enrich the results of the study of Mesmer-Magnus and DeChurch (2009) which explains the idea that aspects of uniqueness and openness of information sharing are a parallel task and socio-emotional function of the team. Unique information sharing builds the existing stock of knowledge, directly enhancing the team's task results. The study discusses information more broadly that can allow more in-depth information processing, thus improving the quality of team decisions. Furthermore, taking into account the uniqueness and openness, when the team is more open during discussions, has the potential to increase the sharing of unique information that will encourage quality performance.

Fourthly, the results of this study prove that transformative interaction capability has a positive and significant effect on team agility, indicating that the better transformative interaction capability will increase team agility. In other words, the ability of the team to empower each other in working ideas, complement each other's competencies, interact actively in learning, enhance each other's capacity to think in the future, interact to develop new knowledge and competencies, collaborate to produce integrated knowledge, is a factor important factor in team agility. Agility is the ability to respond quickly in any environmental changes from both demand and supply, including support for flexibility and adaptability, and process alignment [25]. Companies that successfully drive team agility will promote synchronous flow of real-time information among their partners; develop strong, long-term collaborative relationships with suppliers; designing production processes to facilitate delays; build buffer supplies for key components that are cheap; develop a reliable logistics system or partner; and draw up contingency plans and develop a crisis management team [26].

Fifthly, the findings of this study show the positive effect of Team Agility on team performance, which means that the better the team's agility, the better the team's performance. This implies an increasingly agile team, which is characterized by developing new skills quickly, responsive to other team changes, responsive to organizational change, responsive to changes in business processes, functional cross-border cooperation, responsive to IT skills, easy to switch to various projects responsive implementing new management will improve the team's performance. The results of this study confirm previous research that placed the₅₈₇ importance of team agility on team performance. The agility of the work team has been reviewed to achieve a number of organizational benefits, including increasing productivity, profits, and market share, to grow a business in a competitive market from continuous and unexpected changes, and to improve the prospects of an organization to survive in a business environment global turmoil [27].

VI. LIMITATIONS AND FUTURE DIRECTIONS

There are two limitations in this study. The first limitation of this study is the unit of analysis in this study is the team represented by strategic staff, supervisors, managers and directors involved in the new product development team. In fact the form of the team is of many kinds, as described by Hollenbeck, Beersma and Schouten [28] consisting of advise/involvement groups, action/negotiation teams, mixed teams, cross functional teams, extreme action teams, multiteam systems. Further research is needed with groups, teams or other organizations that have heterogeneous membership and in various organizational settings. The strength of this research is that the sample consists of work teams that occur naturally with individuals who depend on each other to complete the task. The team works physically in the same work environment and often interacts throughout the day. Team performance assessment uses indicators of self-reported measurement or self-performance, which respondents assess team performance based on their own perceptions and sub-subjectivity. This needs to be a study for future research so that there are elements of assessment from other parties in the form of dyadic research (from team members) so as to provide more comprehensive results.

ACKNOWLEDGMENTS

This paper was written with the support of Universitas Muhammadiyah Yogyakarta, Indonesia and Universiti Sains Islam Malaysia.

REFERENCES

- [1] A. Ceschi, K. Dorofeeva, R. Sartori, Studying teamwork and team climate by using a business simulation: how communication and innovation can improve group learning and decision-making performance. *European Journal of Training and Development* **38**, pp. 211-230, 2014.
- [2] J. E. McGrath, Time, interaction, and performance (TIP) A Theory of Groups. *Small group research* **22**, 147-174 (1991).
- [3] S. A. Carless, C. De Paola, The measurement of cohesion in work teams. *Small group research* **31**, pp. 71-88, 2000.
- [4] E. Salas, M. L. Shuffler, A. L. Thayer, W. L. Bedwell, E. H. Lazzara, Understanding and improving teamwork in organizations: A scientifically based practical guide. *Human Resource Management* **54**, pp. 599-622, 2015.
- [5] R. Bravo, S. Catalán, J. M. Pina, Analysing teamwork in higher education: An empirical study on the antecedents and consequences of team cohesiveness. *Studies in Higher Education*, pp. 1-13, 2018.
- [6] B. M. Thompson, P. Haidet, N. J. Borges, L. R. Carchedi, B. J. Roman, M. H. Townsend, A. P. Butler, D. B. Swanson, M. P. Anderson, R. E. Levine, Team cohesiveness, team size and team performance in team-based learning teams. *Medical education* **49**, pp. 379-385, 2015.
- [7] A. T. Tran, H. Von Korflesch, A conceptual model of social entrepreneurial intention based on the social cognitive career theory. *Asia Pacific Journal of Innovation and Entrepreneurship* **10**, pp. 17-38, 2016.
- [8] M. Wu, Y.-H. Chen, A Factor Analysis on Teamwork Performance: An Empirical Study of Inter-Instituted Collaboration. *Eurasian Journal of Educational Research* **55**, pp. 37-54, 2014.
- [9] J. R. Mesmer-Magnus, L. A. DeChurch, Information sharing and team performance: a meta-analysis. *Journal of Applied Psychology* **94**, pp. 535-546, 2009.
- [10] M. A. Ferdig, J. D. Ludema, in *Research in organizational change and development*. Emerald Group Publishing Limited. pp. 169-205, 2005.

- [11] S. Lahiri, B. L. Kedia, The effects of internal resources and partnership quality on firm performance: An examination of Indian BPO providers. *Journal of International Management* **15**, pp. 209-224, 2009.
- [12] McCann, J., J. Selsky, and J. Lee, Building agility, resilience and performance in turbulent environments. *People and Strategy*, vol. 32. no. 3. pp. 44-51, 2009.
- [13] M. London, V. I. Sessa, The development of group interaction patterns: How groups become adaptive, generative, and transformative learners. *Human Resource Development Review* **6**, pp. 353-376, 2007.
- [14] J. Hong, O.-K. D. Lee, W. Suh, Creating knowledge within a team: a socio-technical interaction perspective. *Knowledge Management Research & Practice* **15**, pp. 1-11, 2016.
- [15] M. Kleinsmann, J. Buijs, R. Valkenburg, Understanding the complexity of knowledge integration in collaborative new product development teams: A case study. *Journal of Engineering and Technology Management* **27**, pp. 20-32, 2010.
- [16] Maskudi, C. Dwiatmadja, A. Yuniawan, The Mediating Effect of Commitment Team Goals and Team Solidarity Capital in the Team Cohesiveness toward Team Performance: At Book Publishing Company in Central Java and Special Region of Yogyakarta, Indonesia. *Calitatea* **20**, pp. 97-102, 2019.
- [17] A. E. Akgün, H. Keskin, G. Lynn, D. Dogan, Antecedents and consequences of team sensemaking capability in product development projects. *R&D Management* **42**, 473-493 (2012).
- [18] C. D. Hoggan, Transformative learning as a metatheory: Definition, criteria, and typology. *Adult education quarterly* **66**, pp. 57-75, 2016.
- [19] C.-P. Lin, Learning task effectiveness and social interdependence through the mediating mechanisms of sharing and helping: A survey of online knowledge workers. *Group & Organization Management* **35**, pp. 299-328, 2010.
- [20] M.-L. Liu, N.-T. Liu, C. G. Ding, C.-P. Lin, Exploring team performance in high-tech industries: Future trends of building up teamwork. *Technological Forecasting and Social Change* **91**, pp. 295-310, 2014.
- [21] I. Ghozali, H. Latan, *Structural Equation Models: Alternative Methods to Partial Least Square (PLS)*. Semarang: Diponegoro Publisher Agency, 2014.
- [22] Hair, J. F., M. Sarstedt, L. Hopkins, and V. G. Kuppelwieser. Partial least squares structural equation modeling (PLS-SEM) An emerging tool in business research. *European Business Review*, vol. 26. no. 2. pp. 106-121, 2014.
- [23] Salas, E., R. Grossman, A. M. Hughes, and C. W. Coultas. Measuring team cohesion: Observations from the science. *Human factors*, vol. 57. no. 3. pp. 365-374, 2015.
- [24] J. E. Mathieu, M. R. Kukenberger, L. D'innocenzo, G. Reilly, Modeling reciprocal team cohesion–performance relationships, as impacted by shared leadership and members' competence. *Journal of Applied Psychology* **100**, pp. 713-722, 2015.
- [25] G. Dwayne Whitten, K. W. Green Jr, P. J. Zelbst, Triple-A supply chain performance. *International Journal of Operations & Production Management* **32**, pp. 28-48, 2012.
- [26] H. L. Lee, The triple-A supply chain. *Harvard business review* **82**, pp. 102-113, 2004.
- [27] K. Breu, C. J. Hemingway, M. Strathern, D.⁵⁸⁹Bridger, Workforce agility: the new employee strategy for the knowledge economy. *Journal of Information Technology* **17**, pp. 21-31, 2002.
- [28] J. R. Hollenbeck, B. Beersma, M. E. Schouten, Beyond team types and taxonomies: A dimensional scaling conceptualization for team description. *Academy of Management Review* **37**, pp. 82-106, 2012.