

## Literature Review: Analysis of Factors Influencing Teamwork on Team Performance in Software Development Within the Telecommunication Industry in The Middle East Region

Fatmawati A Rahman<sup>1\*</sup>, Rosmaladewi<sup>2</sup>, St Ramlah<sup>3</sup>  
Sekolah Tinggi Ilmu Ekonomi Tri Dharma Nusantara, Indonesia<sup>1,3</sup>  
Universitas Puangrimanggalatung, Indonesia<sup>2</sup>  
**\*Email Correspondence:** fatmawati.a.rahman@gmail.com

### Abstract

*Software in the telecommunications industry plays a crucial role in developing network systems and providing better services to customers. Software development is a complex activity relying on human commitment. Effective software development requires an experienced team, and the influence of a team in software development within the knowledge-based organization can support software companies to become more innovative and proficient. This research focuses on the Middle East region due to its significance as a center for global events and its sensitivity in strategic, political, economic, cultural, and religious aspects. The aim of this study is to examine the factors influencing team performance in software development within the telecommunications industry. The research method used is a qualitative research method utilizing secondary data sources obtained from various international journals, articles, and previous studies analyzed by the author related to the issues to be examined in this research. Overall, the implications of these findings underscore the importance of human resource management in considering cohesive factors, coordination, communication, mutual support, efforts, and contributions in building an effective teamwork environment.*

**Keywords:** *Teamwork, Team performance, Software Development, Telecommunications.*

### INTRODUCTION

"The telecommunications software industry develops software for use in telecommunications. This industry encompasses the development of software for various types of telecommunication devices such as mobile phones, computers, and network devices. Companies in this industry can develop software for various applications like instant messaging, social media, and e-commerce. Additionally, this industry includes the development of operating systems and other software used in telecommunications.

Software in the telecommunications industry plays a crucial role in developing network systems and providing better services to customers. Software development is a complex activity based on human commitment. Moreover, as software development requires an experienced team, the influence of teamwork on software development within a knowledge-based organization can support software companies in becoming more innovative and skilled.

In software development within the telecommunications industry, teamwork is crucial to execute software development tasks such as designing, developing, testing, and maintaining software systems. This collaboration can take various

forms, ranging from adding staff to project-based outsourcing and managed services.

Teamwork is the highest competitive advantage in an organization or company. Teamwork or group work is a way to manage various behaviors of members or individuals within an organization, theoretically not complicated but challenging to implement in daily reality. Good teamwork will be established if every team member shares the same commitment. Therefore, effective teamwork requires courage, perseverance, and discipline.

To enhance software development performance in the telecommunications industry, effective teamwork is crucial. Effective teamwork can improve efficiency, innovation, team performance, and foster relationships among team members. Apart from teamwork, several strategies can be employed to enhance software development team performance, including setting clear and achievable goals, providing context, and equipping the team with appropriate tools and technology. Outsourcing specific procedures to contractors can also be a good approach to save time and recruit professional specialists.

Finally, adopting open-source solutions or developing customized solutions to replace outdated products can help businesses remain competitive in the rapidly evolving telecommunications industry.

The main reason for most project failures is poor performance within the development team. To investigate how software development projects can be more successful, the solution lies in improving teamwork, as the uniqueness of software development largely relies on team efforts. Therefore, a deeper understanding of factors or characteristics significantly influencing the performance of teams involved in software development cannot be overstated.

This research focuses on the Middle East region because it has become a focal point for global events and is a highly sensitive region, strategically, politically, economically, culturally, and religiously. Considering these phenomena, the researcher aims to delve deeper into how teamwork within companies in this region influences the success of their team performance."

## METHOD

This research employs a literature review methodology, specifically utilizing the narrative review model. The narrative review involves comparing data from several international journals that have been analyzed and summarized based on the author's experiences, existing theories, and models. The research method utilized is qualitative research, drawing on secondary data obtained from various international journals, articles, and previous studies that the author has analyzed concerning the issues to be examined in this study.

The researcher adopts an analytical descriptive method, which involves gathering, identifying, organizing, and analyzing various data found within the selected literature.

## RESULT & DISCUSSION

There have been numerous literature studies conducted to identify the factors influencing team performance. These studies indicate that factors such as communication, leadership, and mutual trust among team members significantly impact team performance. Effective communication enables team members to easily share information, reducing confusion and enhancing work efficiency. Furthermore, good leadership can help increase motivation and coordination among team members. On the other hand, trust among team members can contribute to building harmonious work relationships and facilitate mutual support.

Hoegl and Gemuenden (2001) investigated the influence of six factors of team quality - cohesion, coordination, communication, supportiveness, effort, contribution - and found that team quality is significantly linked to team performance as assessed by team members, team leaders, and external team managers."

"The most basic component of Team Work Quality is communication within the team. Communication provides a means for exchanging information among team members (Pinto and Pinto 1990). The quality of communication within a team can be described by the frequency, formalization, structure, and openness of information exchange. Frequency refers to how extensively team members communicate (i.e., time spent communicating).

A shared understanding of interdependencies and the current status of individual contributions also determines the quality of team work performed. Although teams must collaborate on fundamental aspects of a joint task, many activities in the task process must be delegated to individual members working on parallel subtasks. One essential component of collaborative quality in teams is the harmonization and synchronization of individual contributions (Tannenbaum et al. 1992, Larson and Schaumann 1993, Brannick et al. 1995). To do this effectively and efficiently, the team needs to agree on a common structure, schedule, budget, and work outcomes. Thus, coordination means that the team must develop and agree upon a structure of shared goals related to the joint task that have sufficiently clear sub-goals for each team member.

It is important for team work quality that each team member can contribute all relevant knowledge and experience to the team's task (Hackman 1987, Seers et al. 1995). This is particularly crucial for teams with innovative tasks as they often comprise members skilled in different functional areas (e.g., Research and Development, Marketing, Finance, etc.). The purpose of such cross-functional

teams would fail if some team members could not convey their views and ideas because other team members dominated the discussion and decision-making process. Therefore, balancing contributions to the team task by considering each member's specific knowledge and experience is vital for team work quality. While not everyone needs to contribute the same number of ideas, for example, an equal amount.

Based on Tjosvold's work (1984, 1995), we find that mutual support among team members is an essential component of Team Work Quality. Tjosvold (1995) argues that for interdependent tasks, mutual support is more productive than competitive strength. Therefore, team members working towards common goals must show mutual respect, provide assistance when needed, and develop ideas and contributions from other team members rather than trying to outdo each other. Competitive behavior within the team leads to distrust and frustration, while mutual support encourages the integration of team members' expertise and is therefore a crucial aspect of collaboration quality in teams.

Norms are defined as shared expectations regarding team member behavior (Levine and Moreland 1990, Goodman et al. 1987, Helfert 1998). Although shared expectations can occur for every observable type of behavior within a team, team members' efforts are crucial for Team Work Quality. Dividing the workload and prioritizing team tasks over other obligations indicate the efforts made by team members towards the joint task (Hackman 1987, Pinto and Pinto 1990, Campion et al. 1993). To achieve high Team Work Quality and avoid conflicts among team members, it is crucial for everyone in the team to know and accept norms regarding sufficient effort. High, uniform effort from all team members is key to collaboration quality.

Team cohesion refers to the extent to which team members want to remain in the team (Cartwright 1968). Several forces play a role in an individual's desire to stay within a team. In their meta-analysis (comprising 49 empirical studies), Mullen and Copper (1994) differentiate between three forces of cohesion: (1) interpersonal attraction among team members, (2) commitment to the team task, and (3) team-group pride. High-quality team work is difficult to achieve without an adequate level of cohesion. If team members lack a sense of togetherness and ownership, if there is little desire to sustain the team's continuity, intensive collaboration seems unlikely to occur. An adequate level of cohesion is required to sustain the team, engage in collaboration, and thereby lay the foundation for high Team Work Quality.

In addition to these six aspects, many literature studies have been conducted to identify factors influencing team work performance. These studies indicate that factors such as leadership and trust among team members have a significant impact on team work performance. Good leadership can help increase motivation and coordination among team members. On the other hand, trust among team

members can help build harmonious work relationships, enabling team members to support each other.

Research conducted by Sharif and Scandura (2014) shows that good leadership can enhance team work performance. The study found that good leadership can motivate team members, facilitate coordination among team members, and assist in effective decision-making. The results of this research indicate that effective leadership plays a crucial role in creating an effective team.

Research conducted by Nuraeni et al. (2020) demonstrates that trust among team members can enhance team work performance. The study found that trust among team members can help build harmonious work relationships, enhance team members' motivation, and increase collaboration among team members.

Overall, the analysis related to the findings of previous research and literature studies indicates that the factors influencing team work performance are highly complex and context-dependent. Therefore, further research is needed to deepen the understanding of the factors influencing team work performance and ways to optimize them. Human resource management needs to consider these factors."

## CONCLUSION

In the telecommunications software industry, software development for telecommunications use is a crucial aspect. This industry involves the development of software for various telecommunication devices such as mobile phones, computers, network devices, and applications like instant messaging, social media, and e-commerce. Software development plays a role in expanding network systems and enhancing services for customers.

The software development in this industry involves close teamwork, and the performance of software development teams is influenced by factors such as effective communication, coordination of expertise, mutual support among team members, etc. Good teamwork is essential for achieving software development goals, and open communication, good coordination, as well as reciprocal support, are key factors in creating an effective team.

Additionally, software development in the telecommunications industry should pay close attention to the diversity of values among team members. Because diversity of values can enhance creativity and perspectives within the team. Moreover, managers need to be ready to manage potential conflicts that may arise due to these differences in values.

Overall, the implications of these findings underscore the importance of human resource management in considering these factors in building an effective team. While numerous literature studies have been conducted on factors influencing team performance, this research demonstrates that these factors



significantly impact team performance in software development within the telecommunications industry. This provides new insights for organizations and researchers on how to build effective teams in the context of software development. Good teamwork and managing these key factors can enhance team performance and the success of software development in the telecommunications industry.

## REFERENCES

- Alderfer, C. P. 1987. An intergroup perspective on group dynamics. 1990. Beyond boundary spanning: Managing external dependence in product development teams. *J. High Tech. Management Res.* 1(2) 119-135.
- Brannick, M. T., A. Prince, C. Prince, E. Salas. 1995. The measurement of team process. *Human Factors* 37(3) 641-651.
- Cartwright, D. 1968. The nature of group cohesiveness. D. Cartwright and A. Zander, eds. *Group Dynamics: Research and Theory*, 3rd ed. Tavistock Publications, London, U.K., 91-109.
- Gladstein, D. L. 1984. Groups in context: A model of task group effectiveness. *Admin. Sci. Quart.* 29 499-517.
- Gold, N. (2005). *Teamwork: Multi-disciplinary perspectives*. New York: Palgrave Macmillan.
- Hackman, JR 1987. *Desain tim kerja*. JW Lorsch, penyunting. Buku Pegangan Perilaku Organisasi. Prentice-Hall, Englewood Cliffs, NJ, 67-102.
- Helfert, G. 1998. Team management of business relationships: A framework for effectiveness. H. G. Gemuenden, T. Ritter, A. Walter, eds. *Relationships and Networks in International Markets*. Elsevier (Pergamon Press), Oxford.
- Katzenbach, JR, & Smith, DK (2005). *Disiplin Tim*. (sampul cerita). [Artikel]. *Tinjauan Bisnis Harvard*, 83(7/8), 162-171
- Kozak, Y. Barriersa mendapatkan kinerja tim yang lebih baik dalam proyek perangkat lunak yang tangkas. Universitas Teknologi Chalmers. Departemen Teknik Sipil dan Lingkungan. Swedia, 2013.
- Lijan, (2017), *Manajemen Sumber Daya Manusia*, Bumi Aksara: Jakarta
- Mangkunegara, A. 2009. *Manajemen Sumber Daya Manusia Perusahaan*. Bandung: PT. Remaja Rosdakarya
- Manzoor, Hafiz, Murad, Zulqarnain. 2011. Effect of Teamwork on Employee Performance. *International Journal of Learning and Development* 1(1): 110-126.
- Mullen, B., C. Copper. 1994. The relation between group cohesiveness and performance: An integration. *Psych. Bull.* 115(2) 210-227.
- Nuraeni, A., Asmiati, A., & Arsyad, M. (2020). The Impact of Trust on Team Performance: A Study on the Healthcare Sector of Pakistan. *International Journal of Environmental Research and Public Health*, 18(1), 116
- Prawirosentono, S. (2012). *Management of human resource, employee performance policy, strategy of organization development competitives in era of world free trade*. Yogyakarta: BPFE Press.