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ENHANCING TEAM-RELATED KNOWLEDGE SHARING IN AGILE VIRTUAL TEAMS: SOCIAL, PSYCHOLOGICAL AND TRUST ENABLERS FOR DISTRIBUTED COLLABORATION – KSAVT FRAMEWORK

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Abstract
Trust, motivation, and collaboration behavior are critical in knowledge sharing (KS) in Agile Virtual Teams (AVTs). The paper investigates the Team-Related Knowledge (TeRK) category of the Knowledge Sharing for Agile Virtual Teams (KSAVT) Framework with emphasis on the interpersonal influences of KS in distributed agile organizations. Based on a qualitative multi-case study of three international software organizations, the study discusses eight TeRK-related factors such as interdependence, self-organization, autonomy, and communication and relates them with eleven practical guidelines in the principles of respect, accountability, recognition, and alignment of team and project goals. It has been found that the key to the preservation of cohesion and knowledge flow in dispersed teams is psychological safety, frequent communication, and recognition between members of the team. Researchers conclude that a robust team culture and motivation will make KS a procedural requirement and a group of people, which solidifies agility, trust, and lifelong learning.
Keywords: Agile virtual teams, knowledge sharing, team related knowledge, influencing factors, guidelines, global software development, KSAVT Framework.

INTRODUCTION

Knowledge sharing (KS) in Agile Virtual Teams (AVTs) will only flourish in a team environment where the dynamics of open communication, trust, and collaboration exist [1,2]. These dynamics are more difficult to maintain in distributed settings, which include cultures, time zones, and technical boundaries [3,4]. The Team-Related Knowledge (TeRK), subscale of the validated KSAVT Framework, is interested in the effect of interpersonal relationships, coordination, and autonomy on KS effectiveness [5]. The KSAVT Framework recognizes eight influencing factors (TeRK IF 1-8), such as access to information in a timely manner, interdependence, mutual adjustment, personal interaction, self-organization, autonomy, elaboration of information, and cross-site communication [6,7]. To operate them, this paper relates the eleven practical guidelines with the IFs, including the practices of respect, trust, recognition, and motivation, to enhance team unity and turn interpersonal coordination into a constant stream of knowledge. This article is valuable because it reveals how a division of strong team culture, shared responsibility, and open communication can turn collaboration into an open knowledge sharing ecosystem that is self-renewing around the subject of AVTs [8].

RELATED WORK

The repeated predictors of an effective KS in agile environments are team cohesion and trust [9]. Interpersonal distance in global distribution, cultural as well as time bound, minimizes the spontaneous interchange of information in a global team, preventing the tacit knowledge flow [10,11]. Research findings indicate that distributed agile teams enhance agility by recovering through self-organization, autonomy, and mutual adjustment, as physical proximity is substituted by structured collaboration rituals, psychological safety and mutual respect [12,13]. Research proves that the members tend to be more open when they feel that they are appreciated [14]. Frequent exchanges, open feedback and appreciation also help in maintaining engagement [15]. Nevertheless, most of the empirical research explains that team enablers are important but not how to apply them [16]. This

paper fills this gap by performing an empirical validation of eight TeRK factors and suggesting eleven practical instructions that could promote trust, transparency, and motivation and transform interpersonal coordination into quantifiable KS outcomes in distributed agile settings.

1. Methodology

The study employed qualitative multi-case research design in three international software companies based on agile models [17, 18]. Semi-structured interviews (45-60min) were carried out with eight participants (scrum masters, developers, QA engineers, product owners). Artefacts of the projects (log of communications, sprint reviews, retrospectives) were examined to elucidate the interview data [18].

1.1. Research Objective (RO)

To investigate the interaction of team-related influencing factors (TeRK 18) and eleven behavioral guidelines to enhance collaboration, trust, and knowledge sharing in AVTs.

1.2. Research Questions (RQs)

- RQ1: How do team-related factors influence the flow and quality of knowledge sharing in AVTs?
- RQ2: How do the eleven derived guidelines operationalize these factors to strengthen team cohesion and knowledge exchange.

Interpretation of the interview transcripts via thematic analysis occurred through coding [19]. The comparison of cross-case patterns was carried out to determine the behaviors that facilitated or impaired KS. This knowledge was condensed in eleven implementation guidelines, which were associated with certain factors of TeRK. Data triangulation, member checking, and anonymization of all the participants and organizations were used to guarantee credibility [19].

RESULTS

The findings validated all eight Team-Related Knowledge (GRK) influencing factors, presented in Table 1.

Table 1 Team Related Knowledge Sharing Influencing Factors - KSAVT Framework

IF Sr. No.	Team Related Knowledge
TeRK 1	Allow the right people to gain access to the correct content at the right time
TeRK 2	High Level of interdependence and cooperation
TeRK 3	Coordination on mutual adjustment and frequent feedback
TeRK 4	Sharing Knowledge through personal interaction
TeRK 5	Self-organization
TeRK 6	Autonomy
TeRK 7	Elaboration of Information
TeRK 8	Communication between local and remote members

The study derived eleven actionable guidelines that together strengthen goal-level knowledge sharing (KS) within Agile Virtual Teams (AVTs). The guidelines are presented in Table 2.

Table 2 Guidelines for Team Related Knowledge Sharing – KSAVT Framework

#	Guidelines for TeRK	Sources
1	Respect every team member	1, 2, 3
2	Evaluate seriousness of team members	1, 2, 3
3	Value each other's opinions	1, 2, 3
4	Know the limits of every member	1, 2
5	Know the experience and expertise of every member	2, 3
6	Regular discussions about work	1, 2, 3
7	Use each other's ideas/knowledge	1, 3
8	Communicate your needs to the team leader	2, 3
9	Promote self-motivation	1, 2, 3
10	Acknowledgements and reward	1, 3
11	Team objectives vs. Project objectives	1, 2, 3

1.3. Validation of TeRK Influencing Factors

- The availability of the correct content (TeRK 1): Repositories should be available in time, minimizing dependency delays [20].
- Interdependence and cooperation (TeRK 2): Teams that shared the ownership of sprint results are more cooperative and proactive in terms of knowledge sharing [21].
- Mutual adjustment & feedback (TeRK 3): Continuous learning loops are enabled by constant retrospection and peer reviews [22].
- Personal interaction (TeRK 4): Informal virtual meetups help to overcome emotional distances and enhance team identity [23].
- Self-organization (TeRK 5), Autonomy (TeRK 6): Workers who have a chance to plan work and select methods would be more eager to share knowledge [24].
- Information elaboration (TeRK 7): The greater the members explain how and why things are done, the better the understanding would be in the group [25].
- Local-remote communication (TeRK 8): Frequent, in-person contact with the remote contributors should be provided to ensure that remote contributors do not feel isolated [26].

4.2 Eleven Derived Guidelines

The derived eleven guidelines for the KSAVT Framework and their relationship with the identified Ifs is presented in Table 3.

Table 3 Relationship of Guidelines with the TeRK IFs - KSAVT Framework

Guidelines	Supported TeRK Factors	Purpose
1. Respect every team member	TeRK 2–4	Build psychological safety and trust.
2. Evaluate seriousness of members	TeRK 2, 6	Promote accountability and reliability.
3. Value each other's opinions	TeRK 2–4, 7	Encourage diverse input and richer solutions.
4. Know the limits of every member	TeRK 5–6	Balance workloads and avoid burnout.
5. Know members' experience & expertise	TeRK 1, 7	Enable accurate task allocation and targeted KS.
6. Regular discussions about work	TeRK 3, 8	Maintain transparency and continuous feedback.
7. Use each other's ideas/knowledge	TeRK 2–7	Foster reuse and co-creation.
8. Communicate needs to team leader	TeRK 3, 6, 8	Ensure resource and support alignment.
9. Promote self-motivation	TeRK 5, 6	Enhance intrinsic drive for collaboration.
10. Acknowledgements & rewards	TeRK 2, 4	Reinforce positive knowledge behaviors.
11. Align team objectives with project objectives	TeRK 1–3, 8	Maintain coherence between team learning and project outcomes.

Teams applying these behaviors displayed tighter coordination, higher morale, and smoother flow of tacit knowledge.

DISCUSSION

The results prove that the human layer of the KS Framework is based on team-related knowledge sharing [27,28]. The TeRK factors explain what can make people trust each other and cooperate; the rules outline how to do it following specific, observable steps [29]. Psychological safety is directly enabled by respect (G1), valuing opinions (G3) and recognition (G10), which are necessary in open discussions critical to KS. Knowledge reuse (G7), regular communication (G6, G8), and continuous feedback loops are also in line with agile theory of transparency and inspection [30]. The appreciation of expertise (G5) and awareness of constraints (G4) maximize the allocation of tasks, which enhances interdependence (TeRK 2) [31]. Moreover, self-organization (TeRK 5) and autonomy (TeRK 6) are identified as twin stimuli: when the members are entrusted to make their own decisions but are still responsible because of common objectives (G11), the self-reinforcing flow of knowledge will be achieved [32]. Motivation and recognition transform KS obligation into intrinsic behavior, which reiterates prior research that found empowerment to be related to quality collaboration [33]. Finally, the culture of the team is the driver of all other KS dimensions [34]. Without trust, respect and motivation, even sophisticated tools or processes collapse [35]. Thus, the incorporation of TeRK factors and guidelines makes the KSAVT Framework humanized in that knowledge flourishes in an environment where teams feel considered, compatible and free.

6. Limitations and Future Work

The sample size in this study was small consisting of software organizations with agile frameworks and findings might differ in non-agile or hierarchical environment. The next round of work ought to employ quantitative or longitudinal designs to analyze the impact of TeRK guidelines on the measurable outcomes, i.e. engagement, knowledge retention, and velocity trends. The study of cross-cultural team behavior might also lead to more findings on how respect, motivation, and communication norms vary among various global settings.

CONCLUSION

The interpersonal basis of successful KS in Agile Virtual Teams is referred to as Team-Related Knowledge (TeRK) category. This study, which proved eight TeRK factors and produced eleven guidelines, offers a behavioral plan of the creation of cohesive, self-motivated, and communicative teams. The connective tissue that makes collaboration into long-term knowledge sharing is comprised of respect, trust, motivation, and feedback. A team that is focused on objectives, that is free in communication and that values contribution of others, forms an environment where knowledge is transferred freely without concern about place or position. Incorporating such behaviors into agile practices promotes not only knowledge retention but also morale, creativity, and learning in the long-term organizational level in AVTs.

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