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How to improve team effectiveness through intrateam expertise integration.

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Abstract

Modern organizations increasingly introduce autonomous teams to adapt to continually changing customer demands in order to achieve a competitive advantage. Therefore, the interest in how to achieve team effectiveness is increasing. This study examines the relationship between team goal orientation and team effectiveness in the knowledge-based industry. It is argued that sharing and combining knowledge and experience (i.e. expertise integration) in teams mediates this relationship. Goal orientation theory discusses how learning and performing (prove or avoid) goal orientations influence the attitudes and behavior of employees in organizations. Shared team perceptions determine how effective a team will be in achieving its outcomes. Data was collected from 25 teams who are jointly responsible for executing non-routine knowledge work and have been working together for a long time in the knowledge-based industry. The 25 teams consist of 144 employees of a Dutch University of Applied Sciences. Results show that although the examined teams used learning and performance prove goal orientations, learning goal orientation had a greater impact on team effectiveness through expertise integration. In this study evidence was found that learning oriented teams enhance team effectiveness through expertise integration. Expertise integration is not THE intervening process, but one of the processes that successfully can be deployed. These results differ from the results of prior studies and confirm that different team goal orientations predict distinct dimensions of team effectiveness. Additionally, the results demonstrate that teams with different team goal orientations use distinct mechanisms to achieve team effectiveness, qualitative as well as quantitative. Team context and outcome vary the impact of goal orientation.

1. Introduction

The introduction of autonomous teams offers potential for organizations to be more successful (Bligh et al., 2006; DeShon et al., 2004). Therefore, organizations increasingly adapt their organizational structure. A hierarchical, vertical structure is effective if there is a stable environment, in which repetition of past work is prominently present (Chan et al., 2003). However, the rapidly changing demands that many organizations face today, require organizational structures, systems and people who are more adaptable and flexible. Introducing autonomous teams is one way in which organizations can contribute to a higher degree of team effectiveness and in the end to competitive advantage (Cacioppe & Stace, 2009; DeShon et al., 2004; Wang et al., 2014). Teams are defined as social systems of three or more people, who are interdependent in their tasks, and who share responsibility for their outcomes (Hoegl et al., 2004). Teams have been given increased autonomy and responsibilities to achieve enhanced adaptability and flexibility. Teamwork empowers people to use

their abilities which have relevance for motivation and group cohesiveness. Working in teams helps deepen employees' expertise, stimulates initiative taking behavior and enhances interdependence and team collegiality (Hamel, 2011). Such social and intellectual mechanisms can lead to greater satisfaction and confidence in the team's future, which will lead to long-term gain (Mehta & Mehta, 2018).

Thus, teams are an important part of the functioning of an organization. They can be significant contributors to the effectiveness of an organization or can cause problems and restrict success. Successful autonomous teams are expected to show higher creativity, innovative behavior and shared expertise to solve complex problems (Bligh et al., 2006). But have they? To meet a team's full potential for innovative and competitive advantage, team members need to share and combine knowledge, skills and experience and create new knowledge. But they don't!

As a result, the interest in how team effectiveness can be achieved is increasing. Several studies describe single variables that impact team performance, like team cohesion, team efficacy, psychological safety and intragroup trust (Cacioppe & Stace, 2009). Despite an impressive body of literature, an integrated approach to team effectiveness is limited. This study is based on an integrated approach to team effectiveness and considers both the quantitative aspects (such as objective performance) and qualitative aspects (such as team viability) of team assessment. Both the short and the long term are also considered. Related to each other, these aspects give a broad and realistic picture of team effectiveness (Mehta & Mehta, 2018. Considering team effectiveness this way might be valuable for team-based organizations in the context of knowledge-based industries. In addition, the use of teams has been increasing in organizations and team members work together for long time. They are autonomous and responsible for their performance. Qualitative outcomes may be considered critical to sustaining a positive and productive team culture. Therefore, assessing qualitative outcomes is just as important as assessing team objective performance (Bell & Marentette, 2011; Mehta & Mehta, 2018).

Prior research has shown that successful teams share knowledge and skills and combine these to create new ideas and new expertise (Mehta & Mehta, 2018; Tiwana & McLean, 2005). Expertise integration is a process in which team members actively consolidate and synthesize their specialized expertise and capabilities. This yields a combination of existing and new expertise, resulting in new ideas, new learning and new expertise (Tiwana & McLean, 2005). The team body of knowledge is continuously expanding. This is crucial to unlock a team's full potential. In knowledge-based industries, work is non-routine and constantly changing customer demands require adaptive and flexible responses. (Qu & Liu, 2017). Knowledge work, or work that requires the intellectual capital of skilled professionals, is becoming increasingly complex. The more complex the work to be done, the lower

the likelihood that any individual has the expertise needed for all task components required. Thus, expertise of multiple individuals must be integrated to create new knowledge, creativity and real innovation to solve complex problems (Carson et al., 2007; Coun et al., 2019). Although expertise integration is an absolute necessity, realization is a major challenge. Team members are often hesitant in sharing and combining their expertise. Expertise integration also requires a significant investment of time and energy. In some teams, such a process might result in more satisfaction. In other teams, it might be seen as too much effort. Based on social exchange theory team members tend to be more willing to integrate expertise, when the benefits outweigh the disadvantages (Blau, 1964; Coun et al., 2019). This difference in perceptions can have significant implications for long-term team effectiveness.

Seeing that much of the behavior of employees in organizations is goal directed, goal orientation theory may offer an interesting perspective on this matter (Gong et al., 2013; Nederveen Pieterse et al., 2011). When team members differ in their attitudes, values, and beliefs, they will not be motivated to integrate individually held expertise. To overcome such within team differences, it is crucial to aim for goal congruence. Shared goals may encourage team members to put aside their differences and integrate expertise. Goal orientation theory is an accepted theory, concerning team members motivation' and adoption of shared goals. In this respect, a distinction is made between a learning goal orientation, focusing on competence development, a performance prove orientation, focusing on gaining favorable evaluations and outperforming others and a performance avoid goal orientation, focusing on avoiding mistakes and negative evaluations (Gong et al., 2013; VandeWalle, 1997). Team goal orientation can be defined as the shared understanding of the extent to which a team emphasizes learning, gaining favorable evaluations and outperforming other teams or avoiding negative evaluations and failures, respectively. Team goal orientation helps to facilitate group decision making, collaborative problem solving and intragroup coordination that maintain the group's emphasis on learning or performance goals (Bunderson & Sutcliffe, 2003; Gong et al., 2013; Mehta & Mehta, 2018).

This study explores the extent to which intrateam expertise integration mediates the relationship between team goal orientation and team effectiveness in the context of knowledge-based industries. Learning, proving performance and avoiding risk may be associated with distinct team processes and team outcomes (Gong et al., 2013; Mehta & Mehta, 2018; Nederveen Pieterse, et al., 2011). Recent studies show inconclusive findings regarding the intervening mechanisms employed by work teams to realize those team outcomes. DeShon et al. (2004) conclude that learning oriented teams tend to use regulatory mechanisms, such as effort and feedback more often than performance-oriented teams. Other researchers demonstrate that performance-oriented teams utilize regulatory mechanisms like reflexivity (Nederveen Pieterse, et al., 2011) and team planning (Mehta et al., 2009) to achieve team

goals. Mehta & Mehta (2018) conclude that both learning, and performance-oriented teams utilize team knowledge integration to achieve performance. To address this gap in literature, this study will elaborate the research of Mehta & Mehta (2018) and examine whether expertise integration serves as a mediator on the relationship between team goal orientation and team effectiveness. The central question answered in this study is:

What is the relationship between team goal orientation and team effectiveness, and how is this mediated by intrateam expertise integration when working on non-routine tasks?

This study contributes to literature in several ways: first, this study aims to provide a more comprehensive understanding of the role of expertise integration as a key mediating process between team goal orientation and team effectiveness. This can be used to develop models that can positively influence team effectiveness. Autonomous teams are becoming increasingly important for organizations and team effectiveness largely determines the success of organizations. Insight into how expertise integration might increase team effectiveness is crucial. Second, theoretical and empirical work is just beginning to explore the role of expertise integration in knowledge-based industries. This study expands this existing work of Mehta & Mehta (2018) by not only considering knowledge sharing, but also considering expertise integrating, creating new ideas and expanding the body of knowledge. Third, prior studies describe variables that impact team performance, like team cohesion and, team efficacy (Cacioppe & Stace, 2009). But despite an impressive body of literature, an integrated approach to team effectiveness is limited. This study is based on an integrated approach, in which different aspects in relation to each other provide a broad and realistic view of team effectiveness. The fourth contribution concerns the empirical setting. This study responds to the call of several researchers to examine this topic in a real business setting. Their studies are based on student teams acting as top management teams of a virtual business organization (DeShon et al., 2004; Mehta et al., 2009; Mehta & Mehta, 2018; Nederveen Pieterse et al., 2011). These teams are temporary and are formed for a single semester only. Other prior studies focus on teams working on temporary projects in a different and changing team composition. Results of research in a business environment with permanent teams may vary from this prior research. Finally, managers today must find ways to stimulate individuals and teams to share and combine expertise. Traditionally, this is achieved by using technical tools, such as knowledge management systems. Although useful in collecting and sharing existing knowledge, these tools are impersonal and unsuitable for creating new knowledge. This study provides insight into how managers can stimulate intrateam expertise integration more effectively.

This paper is organized as follows: after this introduction, in chapter 2 the theoretical background of team effectiveness, expertise integration and team goal orientation will be deepened. The central research question and hypotheses will be developed, including the research model. The methodology used will be described in chapter 3: the research setting, data collection, including the sample description and measuring and validation of used constructs. Chapter 4 will describe and illustrate data analysis and main results. Finally, the main conclusions, discussion and limitations of this research will be pointed out in chapter 5 including suggestions for further research.

2. Theory and hypotheses

The relationship between team goal orientation and team effectiveness

Work teams are an important part of the functioning of an organization. They are increasingly used by organizations to achieve performance goals by improving employee productivity. The use of work teams helps to boost the morale of employees and as a result satisfaction of members, which has a great impact on the overall effectiveness and performance of the organization (Kumaran & Sangeetha, 2018). Because the success of organizations is more and more dependent on team effectiveness, the interest in how team effectiveness can be achieved, is increasing.

Cohen & Bailey (1997) categorize team effectiveness into three categories: performance, team member attitudes and behaviors. Other views have more fully delineated the construct of team effectiveness, resulting in more than 20 outcomes (Mathieu et al., 2008). However, these outcomes are reconsidered in existing literature and the subtle nuances that are used to differentiate them make categorizations difficult. In this study an integrated approach is taken for team effectiveness. Team effectiveness is operationalized in four dimensions: team viability (a team's capacity to continue working successfully in future), team satisfaction (a feeling of well-being fuelled by team experience), team perceived performance (a sense of how well the team is doing) and team objective performance (Mehta & Mehta, 2018). For a broad and realistic picture of team effectiveness, a good balance between both quantitative and qualitative aspects and short and long term is necessary. This provides insight into the degree of (performance) goal achievement of the teams. How they achieve their goals depends on team goal orientation.

Across the dimensions mentioned above, an integrated approach posits a common source that team members are willing to propose team ideals over of lesser (selfish) concerns. Team members have mixed motives and within-team cooperation is vulnerable to member competition that undermines performance. If the circumstances encourage each team member to make the success of the team their major concern, then this will displace individual competitive tendencies to focus on individual team member's own or competing interests. In an ideal team, team members are aware of challenges including the environment, the needs of customers and colleagues as well as the achievement of key goals.

Much of the behavior of employees in organizations is goal directed (Gong et al., 2013; Nederveen Pieterse et al., 2011). Members of a team form a shared goal perception, in other words, a team goal orientation. This leads to a mutually agreed set of beliefs among team members, who then direct their actions and deliver outcomes as a result. These shared team goal perceptions determine how effective

a team will be and what processes it will use to achieve its outcomes. The concept of team goal orientation is based on the individual achievement motivation theory, but also exists at team level (Dragoni, 2005; Dweck, 1986). Although originally conceived as two dimensional, nowadays three dimensions of team goal orientations are distinguished: a learning goal orientation, which focuses on competence development; a performance prove goal orientation, which focuses on gaining favorable judgments and outperforming others; and a performance avoid goal orientation, which focuses on avoiding mistakes and negative evaluations. Research shows that differences in goal orientation can have a major impact on team behavior and team effectiveness (Gong et al., 2013; Mehta et al., 2009; Mehta & Mehta, 2018; Nederveen Pieterse, et al., 2011). Consistent with previous research on the relation between goal orientation and team effectiveness, which was the direct inspiration for the current study (Gong et al., 2013; Mehta et al., 2009; Mehta & Mehta, 2018), this study focusses the present analysis on goal orientation as a three-dimensional construct.

Originally, Dweck (1986) has a dispositional view, wherein goal orientation is considered as a stable characteristic (trait). Nowadays, a situational view of goal orientation (state) is also proposed (Button et al., 1996; Dragoni, 2005). State team goal orientation is dynamic and dependent on the situation and is the starting point of this study. State team goal orientation is influenced by situational factors, such as performance appraisal and organizational policies. It can be stimulated by factors that indicate the goals and behaviors that are desired, emphasized or rewarded in a team context. As team members communicate with each other more often, they test their interpretations of social events and adjust their individual perceptions and performance motives accordingly. As a result, individual perceptions of the work environment become shared, which leads to a team climate and team goal orientation development. This process can be explained through the process of social approval. Social interactions between team members create dedication, resulting in an increasing need to adapt with social approval as a result (Blau & Collins, 1979; Dragoni, 2005)

Shared climate perceptions form the basis of team goal orientation, resulting in learning, performance prove, or performance avoid goals. Team goal orientation has important implications for group-level processes and outcomes, because team members end up in the same situations and often consult each other on how to act in a particular situation (Bunderson & Sutcliffe, 2003; Gong et al., 2013). Team goal orientation may influence whether teams will engage in processes such as expertise integration. Goal orientation has received a lot of attention from scholars at the individual level. Scholars have only recently started to explore goal orientation on team level, especially when examining team effectiveness.

Little research has been conducted regarding the relationship between team goal orientation and the qualitative and quantitative dimensions of team effectiveness, as defined in this study. Results of studies concerning the relationship between team goal orientation and team performance show inconclusive findings regarding the effect of goal orientation on team performance. Seijts et al. (2004) demonstrated that regardless of the type of goals, goal setting was found to diminish the correlation between goal orientation and performance. Most scholars argue that team learning goal orientation has a nonsignificant effect on team effectiveness (Mehta et al., 2009; Mehta & Mehta, 2018) or team performance (Payne et al., 2007; Porter, 2005). A few found a significant relationship between team learning goal orientation and team performance (Bunderson & Sutcliffe, 2003; Dragoni, 2005; Gong et al., 2013). Team performance prove goal orientation predicts team performance (Dragoni, 2005; Mehta et al., 2009) and team creativity (Gong et al., 2013), but does not always lead to team effectiveness. Teams can perform well, but will not always be effective (Mehta & Mehta, 2018).

A team learning goal orientation focuses on (team) learning to achieve complex outcomes, such as innovation. The emphasis is on developing knowledge, experience and skills, mutual support mechanisms and challenging tasks. A group reality will be created that requires team members to follow the shared learning goal orientation. Teams enhance their performance by doing exploratory learning activities, which involve constantly trying to innovate their work practices and discovering new opportunities for task completion, using various ideas (Kostopoulos & Bozionelos, 2011). Learning oriented teams use an absolute standard, in which perceived performance depends on improving a team's own past performance by focusing on competence development. Thus, team learning goal orientation has generally been associated with positive team outcomes. However, there is some argumentation against the idea that learning oriented teams increase team performance. Kostopoulos & Bozionelos (2011) and Bunderson & Sutcliffe (2003) both argue that teams that overemphasize team learning can incur costs to experiment, without gaining specific benefits. These teams can spend time, without being sure that it will yield anything and can generate more variation than they can effectively integrate into group operations. All this results in inadequate resource allocation for performance and a negative effect on team effectiveness. Nevertheless, this study argues that the benefits of exploratory learning are expected to offset their potential risks for teams working on nonroutine tasks, involving all kinds of external uncertainties. Teams with a strong, but not extreme learning goal orientation are able to learn without excessively sacrificing performance goals. When they have an accurate understanding of their environment, they have greater potential to improve performance. They evaluate new problem-solving solutions and have greater ability to use diverse expertise to shift task requirements. Because of the team's emphasis on developing new skills, mutual support and

being adaptive and solution oriented, learning goal-oriented teams will have productive and satisfied members, leading to a sustainable collaboration in the future. Therefore, it is to be expected that a learning goal orientation positively impacts all dimensions of team effectiveness.

H1a: Team learning goal orientation is positively related to team effectiveness when working on non-routine tasks.

A team performance prove goal orientation consists of being competitive and striving to outperform others. Team members perceive their group as having performance goals, with an emphasis on proving their ability and gaining favorable judgement. A team with a performance goal orientation uses other team's performance, as a standard. Their emphasis is on completing the task as efficiently as possible. The team is motivated to implement exploitation practices to minimize ambiguity and manage multiple task requirements (Kostopoulos & Bozionelos, 2011). Efficiency focused; performance prove-oriented teams are also expected to impact team effectiveness positively. Team satisfaction and viability as well as performance may improve when teams work together on tasks with motivation to excel.

H1b: Team performance prove goal orientation is positively related to team effectiveness when working on non-routine tasks.

Team performance avoid goal orientation is linked to avoiding failures and negative evaluations of their ability. The overarching team goal is to avoid mistakes and criticism instead of actively striving to perform well. Such an orientation tends to avoid challenges or uncertainties that pose a risk of errors and instead favor actions with a high chance of success. Contributions to collective team performance are made based on low task engagement, performance anxieties and risk-avoiding behavior. There is hardly any information exchange or learning from each other, due to a fear of being perceived as incompetent. This results in a less efficient team organization. Reduced efficiency of the team process is at the expense of the quality or quantity of team performance, or both. Eventually, performance-avoid oriented teams exhibit dissatisfied members, who are not motivated to work together in the future. Therefore, it is to be expected that a team with a performance avoid goal orientation impacts team outcomes negatively, resulting in lower team effectiveness.

H1c: Team performance avoid goal orientation is negatively related to team effectiveness when working on non-routine tasks.

The relationship between team goal orientation and expertise integration

The tenet of teamwork is based on a belief that individuals in the team bring knowledge, skills and experience to the workplace. These intellectual assets are likely to improve organizational functioning. The use of cross functional teams is emerging as an attractive strategy to foster synergy: the output of a collection of individuals exceeds the sum of the intelligence of the individual members (Chan et al., 2003).

Scholars increasingly see team members as information processors, who share information, knowledge, expertise, ideas or cognitive resources based on and to achieve goals (Gong et al., 2013; Homan et al., 2007). Goal choice, i.e. what a team intends to achieve, and goal striving, in example the strategies a team uses to achieve a goal, are the fundamentals of a team's motivation process. Team members communicate and integrate expertise with each other (goal striving), to achieve goals. Intrateam expertise integration is an important way of acquiring and creating (new) expertise (Bligh et al., 2006; Qu & Liu, 2017; Tiwana & McLean, 2005). This has been associated with outcomes such as team learning, team memory, team creativity and team decision quality (Tiwana & McLean, 2005). Using the six common dimensions of knowledge integration (Zahra et al., 2020), expertise integration is defined as a process in which team members actively assimilate, consolidate and synthesize their specialized expertise and capabilities, resulting in new ideas and new expertise.

In knowledge-based industries, work is non-routine and constantly changing customer demands require adaptive and flexible responses. (Qu & Liu, 2017). Knowledge work, or work that requires the intellectual capital of skilled professionals, is becoming increasingly complex. The more complex the work to be done, the lower the likelihood that any individual has the expertise needed for all task components required. Thus, expertise of multiple individuals must be integrated to create new knowledge, creativity and real innovation to solve complex problems (Carson et al., 2007; Coun et al., 2019). Expertise can be built on existing expertise and ideas from others by integrating, which likely leads to unusual and unforeseen connections between previously unrelated knowledge fields, resulting in new insights and finally in new expertise (Mathieu et al., 2008; Qu & Liu, 2017). The team body of knowledge is continuously expanding.

Team goal orientation leads to different motives for information processing as expertise integration. Team learning behavior is an important concept from an information processing perspective. It involves the process through which individuals acquire, share, and combine information. It refers to an ongoing process of reflection and action, characterized by asking questions, seeking feedbacks, experimenting reflecting on results and discussing errors of unexpected outcomes of actions (Edmondson, 1999; Schippers & Homan, 2009).

A team learning goal is characterized by the desire to achieve a thorough, rich and accurate understanding of the team's tasks. A desire that motivates systematic information search, processing, exchange and integration (Gong et al., 2013). With the shared learning orientation goal, expertise integration is a valuable process that allows team members to improve their skills, capabilities, and knowledge, resulting in competence development. Team members can seek expertise and learn from other team members. They could also share their own expertise with other team members because they form a sounding board for testing and improving their own expertise and ideas. In this way, new skills are developed, and resources are aligned with growth and innovation (Gong et al., 2013).

Expertise integration is driven by genuine curiosity in learning-oriented teams. Team members usually love to experiment. New understanding and innovations are achieved by discussing ideas and consolidating expertise. Team members show exploratory learning behavior, which entails searching for, processing, and exchanging expertise, leading to new expertise. Based on social exchange theory team members tend to be more willing to integrate expertise, when the benefits outweigh the disadvantages (Blau, 1964). In a learning-oriented team, enriching yourself as a team member with new expertise is a benefit. Therefore, team members with a learning goal orientation actively engage in integration expertise.

H2a: Team learning goal orientation is positively related to expertise integration.

A team performance prove goal, the collective goal of outperforming others, leads to collaboration and motivates expertise integration for task fulfillment. To such teams, expertise integration is not a goal, but a means to an end. Their overarching goal is to demonstrate their competence to others by striving for high performance. A shared team performance prove goal produces outcome interdependence among team members. It generates a preference for joint success, increasing expertise integration. To enhance success, information processes like exchanging and combing ideas to gain new expertise is necessary. Exploitative learning by combining existing expertise, facilitates the mastery of complex tasks. This leads to a better shared understanding of key task areas, facilitating synchronization of team members' experiences and expertise (Kostopoulos & Bozionelos, 2011). A common memory system of task-related expertise enables problem detection and resolution. Reduction of errors and delays increase output quality and team performance. Thus, performance prove-oriented goal orientation leads to exploitative learning. This is beneficial for teams that carry out complex cognitive tasks that require individual members to share and build on each other's expertise. Shared goals and visions lead to bonding between team members which facilitates communication and coordination, which in turn leads to less errors that may arise from misunderstandings. Based on social exchange theory team members tend to be more willing to

integrate expertise, when the benefits outweigh the disadvantages (Blau, 1964). In a performance prove team, integrating expertise provides efficiency and thus team performance.

H2b: Team Performance prove goal orientation is positively related to expertise integration

The process of team expertise integration relies on the collective effort of team members to exchange, discuss, and integrate expertise. A team performance avoid goal orientation is characterized by the risk of making mistakes being more important than the pursuit of opportunities for success. Risk avoiding behavior is more important than actively striving to perform well. This may discourage team members' attempts at exchanging and discussing viewpoints to integrate expertise. Expertise exchange involves risks. Team members underestimate their own capabilities. Asking input from other team members is a risk to one's image because it could be perceived as a sign of incompetence. Sharing ideas may also pose a risk because of possible negative reactions to those ideas. When a team shares a performance avoid goal orientation, a collective perception may emerge in which sharing expertise and ideas is undesirable and consequently expertise exchange behavior will decrease. Based on social exchange theory team members tend to be more willing to integrate expertise, when the benefits outweigh the disadvantages (Blau, 1964). In case of a team performance avoid goal orientation, the benefits do not outweigh the risks involved with expertise integration. In sum, a performance-avoid goal orientated team can hinder integrating expertise, due to their inability to recognize opportunities for success and their fear of being perceived as incompetent.

H2c: Team performance avoid goal orientation is negatively related to expertise integration

The relationship between expertise integration and team effectiveness

Tiwana & McLean (2005) state that team effectiveness is predicted by the extent to which team members integrate their specialised expertise to jointly create new expertise. While expertise is 'owned' at the individual level, it is necessary to integrate specialized, individually held expertise into collective team expertise to benefit from it. Furthermore, expertise integration not only requires team members to jointly solve team-level problems, but also requires them to share and combine expertise to gain new learning. This includes active interpersonal communication and coordination. Prior research shows that expertise integration deeply influences team outcomes, such as team creativity (Tiwana & McLean, 2005), team effectiveness (Cacioppe & Stace, 2009; Mehta & Mehta, 2018) and decision quality (Robert et al., 2008). This is a result of the collective intelligence of a team, which exceeds the sum of the intelligence of the individual members (Chan et al., 2003).

Although expertise integration is an absolute necessity to achieve team effectiveness, realizing this is a major challenge. Success is not only a function of the talents of team members and the available

resources, but also a function of the processes they use to communicate with each other to complete the tasks. Team processes, such as expertise integration, usually require team members to actively communicate with each other concerning social and intellectual needs. Basaglia et al. (2010) identify social capital and communication environment as well as autonomy and experimental climate as predictors of expertise integration. In general, team climate plays an important success factor in processes like expertise integration. It contributes to the ability of team members to interact with the expertise of their colleagues outside their own domain of expertise. Team composition is defined as the clustering of individuals and their relationships to a team and the knowledge complementarities that align their work at the team level (Tiwana & McLean, 2005). The most diverse collection of expertise in a team can potentially result in the most effective team but realizing effectiveness in a diverse group of individuals in a team can be very difficult. The more diverse team members are, the more biases and stereotypes they have towards each other. Therefore, team members are often hesitant in sharing and combining their expertise. They can be hindered by a difference in the attitudes, beliefs, and values among the team members. Team goal orientation might be able to mitigate these differences. The quality of the working relationship is another important success factor for integrating expertise. Relational capital, defined as the level of trust, reciprocity, and closeness of working relationships among team members, deserves attention (Tiwana & McLean, 2005). Team members cannot be forced to consolidate their expertise inputs. However, the full potential of the team will not be realized, if the internal dynamics do not support collaboration between team members (Kumaran & Sangeetha, 2018). Expertise integration requires a significant investment of time and energy. Team members should actively challenge each other's current assumptions and experiment with new ways of doing something to achieve their goals. In some teams, such a process might result in more satisfaction and more confidence in the team's ability to work well in the future. In other teams, this might be seen as too much effort. This difference in perceptions can have significant implications for long-term team effectiveness. This is particularly important in knowledge-based industries, where intellectual capital is embedded in human capital.

It is established that organizational success is not only a function of team members' talents and expertise, but also the processes team members handle to interact with each other to accomplish the work. Expertise integration includes activities that require team members to actively interact with each other to solve problems. It demonstrates the competence of the team and its team members. This increases the chance that team members will continue working together in the future, which positively effects team viability. It also positively influences team satisfaction. Team members feel important when they bring in their own expertise to achieve team goals. Expertise integration enhances team viability, team members' satisfaction and, eventually, team performance.

H3: Expertise integration is positively related to team effectiveness.

Although prior research states that team goal orientation impacts team outcomes (Gong et al., 2013; Mehta & Mehta, 2018; Nederveen Pieterse, et al., 2011), the evidence regarding the intervening mechanisms employed by the teams to achieve those outcomes is inconclusive. Different team processes, such as planning, feedback and reflexivity are characterized as intervening mechanisms between goal orientation and team performance (Mehta et al., 2009; Nederveen Pieterse et al., 2011). It can be argued that a different focus - such as team goal orientation- itself does not directly yield team outcomes, but that the actions or processes that follow from such a focus determine the outcomes. As stated above, members of learning-oriented teams combine and reformulate existing expertise to learn and to produce new insights, generating creative solutions. Thus, team learning goal orientation will boost expertise integration which in turn, will lead to higher team effectiveness.

H4a: Expertise integration will mediate the relationship between team learning goal orientation and team effectiveness.

Similarly, members of performance prove-oriented teams will integrate expertise to find opportunities to perform their tasks even more efficiently to achieve their performance goals. Thus, team performance prove goal orientation will boost expertise integration which in turn, will lead to higher team effectiveness.

H4b: Expertise integration will mediate the relationship between team performance prove goal orientation and team effectiveness.

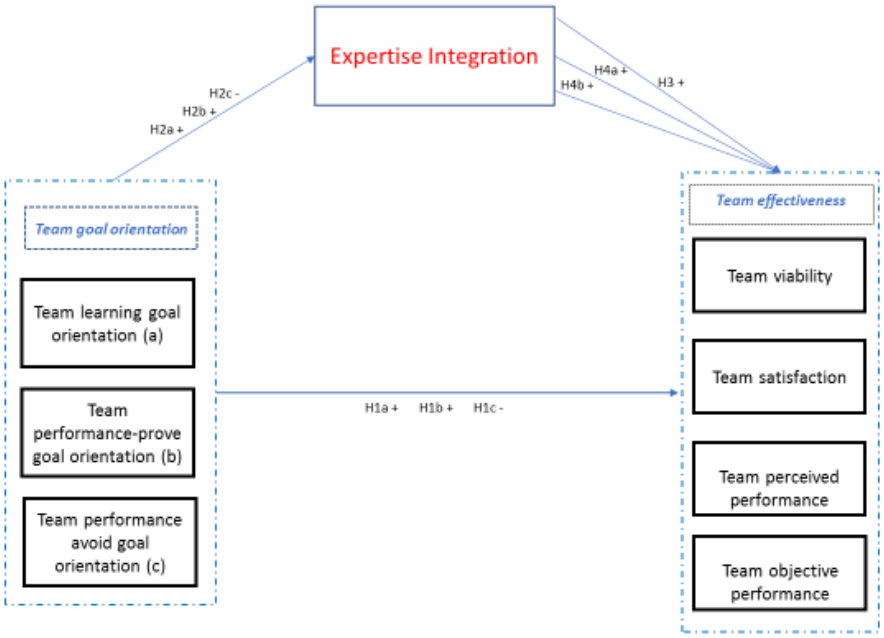
Members of performance avoid oriented teams will not use any expertise integration, due to their tendency to avoid risk and failure.

Several control variables were included at both the individual and team level. As Tiwana & McLean (2005) demonstrate, team composition – heterogeneity in expertise of team members and the quality of working relationships within the team – influence the extent of expertise integration. Therefore, overall tenure, organizational tenure, educational level and salary scale at the individual level were controlled at the individual level. They are considered to contribute to the development of employee's knowledge, skills and their level of expertise in general. Team diversity and educational diversity are known to affect team learning activities, information processing and team performance (Kostopoulos & Bozionelos, 2011; Van der Vegt & Janssen, 2003). This study controlled for team size, team cooperation, team leadership and task interdependence, which are all related to team processes. Team cooperation, as well as team leadership are known to influence team viability, team satisfaction and perceived performance, but also team goal orientation (Dragoni, 2005; Mehta & Mehta, 2018).

Previous studies indicate that task interdependence (rated by team members) influences the creative process, which is important when working on non-routine activities (Gong et al., 2013; Van der Vegt & Janssen, 2003).

In sum, figure 1 shows the conceptual model proposed in this study.

Figure 1: Research model of the relationship between team goal orientation, expertise integration and team effectiveness.



3. Method

Sample

To assess the proposed model and answer the research question quantitative research was conducted (cross-sectional) using a questionnaire. This is in line with the reference study (Mehta & Mehta, 2018), which was the direct inspiration for the current study. A multi-level measurement procedure was used, consisting of two routes for data collection. Data was collected from a Dutch University of Applied Sciences. This organization is one of the 5 largest Universities of Applied Sciences in the Netherlands. It offers high-quality, practice-based education to more than 30,000 students. The University has 14 schools, in which the degree programs, research teams and professional field work together to tackle a range of social issues. Each school is responsible for education and research in its own center of expertise and consists of several teams. Teams execute various activities, including research, education, program management, support, or management.

The current labor market is subject to major and rapid changes. This requires not only students to be able to adapt to these changes properly to keep up with this changeable market. But this changeable labor market requires a University of Applied Sciences to deliver innovative, creative employees who can continuously adapt to this new labor market's challenges as well. Consequently, it is crucial for skilled professionals in the teams to integrate expertise to be effective, to be creative and make true innovation.

This study focuses on expertise integration in teams that are working on non-routine tasks. Members of management teams, program teams, teams of lecturers and researchers are invited to participate. The total response was 187 employees. From this dataset, data of 20 respondents showed missing data. Using a response criterion of three or more completed team members' questionnaires and a team managers' questionnaire, 23 respondents were dropped (Koo & Li, 2016). Hence, the sample was finally composed of 25 teams. The group of dropped respondents (23) who could not be assigned to a team was tested for significant differences with the total response group. An independent sample T-test showed no significant differences between the sample group and the dropped respondents, with one exception regarding perceived performance. '*The quality of our team's output is high*' according to the sample group (*M*= 3,71, *SD* = .919) and according to the dropped group (*M*= 4,14; *SD* = .793), a significant difference (*t (165)* = -2,073), *p* = .040). Because the group of dropouts is small and the chance that it is coincidental is high, these respondents were excluded. Table 1 summarizes information about the sample group.

Table 1: Information about the sample group.

	Teams of lecturers	Research teams	Program teams	Management teams
# Respondents	87	27	18	12
# Teams	15	5	3	2
%	61%	18.5%	12.5%	8%
Education				
- *PhD Degree*	5%	44%	5.5%	0%
- *RA/ RC*	8%	11%	16.5%	0%
- *Masters' degree*	65%	45%	50%	100%
- *bachelors' degree*	20%	0%	22%	0%
- *MBO degree*	2%	0%	5.5%	0%
Avg overall tenure in years	25	23	27	28
Avg organizational tenure in years	11	10	16	9
Avg salary scale	11	12	12	13

Data collection

To collect data, a web-based questionnaire was developed in Qualtrix. The questionnaire was pretested in a test-panel (including a manager, a researcher, a senior lecturer, a process assistant and two research scholars) to ensure the clarity of the questions and to avoid problems with interpretations. The sample group was selected in consultation with the director of the School of Finance.

Procedure

The director of the School of Finance sent an email including a video outlining the purpose and the benefits of the research to her fellow directors of the other 13 schools to solicit participation. They were asked to forward the email to all their employees and invite them to participate in this research. To reduce social desirability bias, the respondents were informed that anonymity was assured, by keeping their answers completely confidential. Two routes for data collection were used. First, questionnaires which include measures of team goal orientation, expertise integration and perceived team effectiveness were sent to team members. Managers' questionnaires were distributed after assigning team members to a team and included the dependent measure of objective team performance. This procedure could not rule out the potential for common method bias.

The email in which the questionnaire was launched was sent on April 14, four weeks after the start of the intelligent lock down because of the COVID-19 pandemic. Due to the enormous workload that this lockdown put on employees, 12 directors decided not to distribute the invitation to participate in the

study. Therefore, it was decided to approach colleagues directly with the request to further distribute the questionnaire within the University. The link to the questionnaire was available until June 1st, as no new respondents were added as of May 25th.

Measures and construct validations

Validated measures were used to study the main variables. In order to ensure content validity across languages, the questionnaire items were originally in English and translated into Dutch by a native speaker, following the commonly used back- translation procedure (Brislin, 1970).

All constructs were measured with existing scales that focus specifically on team level activities. Corresponding to the referent-shift model (Chan, 1998), individual members responded to team referent items for each measured construct e.g. "*In my team we are prepared to take risks to generate new ideas and to discover what works"*. The referent-shifts model was preferred over the individual-referenced direct consensus method, because the latter may not be able to capture or hold the construct at team level (Klein et al., 2001). Responses were coded using multi item five-point Likert scales (1=strongly disagree, 5 = strongly agree). Detailed information about the questionnaire items is attached in Appendix A.

To measure **team goal orientation**, the adapted version of VandeWalle's (1997) scale is used, in which the referent was shifted from individual level to team level, without changing the basic meaning of the construct. Bunderson & Sutcliffe (2003) had already adapted this five-item team learning goal orientation measure (Cronbach's alpha =.81) but did not adapt the team performance prove- and the team performance avoid goal measure. To measure team performance (prove and avoid) goal orientation, the four item performance goal measure of Button, et al. (1996) and Matzler & Mueller (2011) was adapted. After performing a reliability test and a factor analysis, item GO4 "*in my team we feel very good when we know we have outperformed other teams"* was excluded to create a reliable and valid construct for measuring performance prove goal orientation (Cronbach's alpha = .77). Although a frequently used four item performance avoid measure (Gong et al., 2013; Mehta et al., 2009; Mehta & Mehta, 2018), based on VandeWalle's (1997) was used, the construct could not be considered reliable and valid for measuring performance avoid goal orientation (Cronbach's alpha = .46). Therefore, this construct is excluded and hypotheses 1c and 2c are rejected.

Expertise integration was measured by using 3 items of a scale developed by Tiwana & McLean (2005), also used by Prieto-Pastor et al. (2018). This scale also included questions focusing on tacit knowledge, such as experience e.g. "*members of my team synthesize and integrate their individual expertise"*. Measurement was extended with one item focused on expertise exchange within the team: "*members*

of my team exchange ideas with each other to analyze and solve problems", developed by Gong et al. (2013) (Cronbach's alpha = .86).

Different scales were used to measure **team effectiveness** regarding team viability, team satisfaction and team perceived performance. Team viability was measured by three items from a scale developed by Jordan (2001), concerning permanent teams. After performing a reliability test and a factor analysis, item TEFF1 "*my team is capable working together as a unit"* was excluded to create a reliable and valid construct for measuring team viability (Cronbach's alpha = .80). To measure team satisfaction, two items of a scale measuring team satisfaction, developed by Hoegl et al. (2004) were used. These items concerned non routine tasks in a permanent team (Cronbach's alpha = .79). This scale is also used to measure perceived performance. Three relevant items were included in the questionnaire (Cronbach's alpha = .77).

To measure **team objective performance**, the scale developed by Hoegl et al. (2004), where the questions have been converted into questions for the (team)manager about the objective team performance, was also used. All team managers were approached by email and asked to rate their team concerning the items about objective team performance (Cronbach's alpha = .80).

To measure **control variable** team cooperation, three items, used in past research to measure group cohesion and adjusted by Mehta & Mehta, (2018) to measure team cooperation (Cronbach's alpha = .81) were used. Team leadership was measured by a single item "*An informal leader emerged in the team"*. Task interdependence was measured by a single item too *"I usually work on team tasks instead of individual tasks"*, developed by Shin & Zhou, (2007).

Level of analysis and measurement equivalence

Consistent with previous research into intrateam knowledge sharing behavior, team-level measures were obtained by aggregating team members 'responses to the team level (DeShon et al., 2004; Mehta et al., 2009) . All constructs were operationalized at team level; therefore, aggregated values are the average of individual members' perceptions of their team. Considering this aggregation, it was important to statistically verify that these individual responses could be aggregated to the team-level of analysis. Based on the guideline for selecting and reporting ICC (Koo & Li, 2016) the intraclass correlation coefficient (ICC) was used to assess the within team agreement. ICCs were calculated at team level, to test how strongly members in the same group resemble each other, to compare within team response variances. Because raters were selected from a larger population and generalization of reliability results was planned, the Two-way Random-Effects model was used. 'Mean of K raters' was selected because the mean value of 3 raters was used as an assessment base. Consistency

between raters was measured, instead of absolute agreement. ICC values were between .52 (moderate reliability) and .91 (excellent reliability), so aggregation is appropriate (Cicchetti, 1994; LeBreton & Senter, 2008). Detailed information is provided in Appendix B1. Table 2 presents the descriptive statistics of the main constructs.

Table 2: Overview descriptive statistics main constructs.

Construct	Minimum scores	Maximum scores	Mean	Median	SD
Team Goal Orientation	2.88	3.72	3.18	3,25	.20
Learning Goal orientation	2.93	4.53	3.89	4.00	.43
Performance prove goal orientation	2.60	4.25	3.10	3.00	.41
Expertise Integration	3.25	4.75	3.99	4.00	.44
Team Effectiveness	3.13	4.37	3.73	3.76	.32
Team viability	3.00	4.40	3.68	3.75	.38
Team Satisfaction	3.50	4.88	4.09	4.12	.36
Team perceived performance	2.88	4.13	3.52	3.61	.36
Team objective performance	3.16	4.12	3.82	3.75	.55

The Shapiro Wilk test determined that the dependent variables are normally distributed and that the basic condition for regression analysis is fulfilled. Detailed information including histograms of the variables studied are provided in Appendix B2 and B3.

4. Results

Table 3 displays the Pearson correlation coefficients at team level. The results show a high and significant correlation between all qualitative elements of team effectiveness, the dependent variable and team learning goal orientation (team viability r= .66, p<.01; team satisfaction r=.66, p<.01*;* team perceived performance r=.65, p<.01). Unexpectedly, there is only found a significant correlation between the dependent variables team satisfaction (r=.49, p<.05*)* and team perceived performance *(*r=.54, p<.01*)* and team performance prove goal orientation. No significant correlation between team viability and team performance prove goal orientation is found. This was confirmed by a Spearman correlation test (ρ=.06*,* p=.78). Interestingly, no significant correlation is found between team objective performance, the quantitative element of team and any other variable at all. This was confirmed by a Spearman correlation test. Details are provided in Appendix B4. The absence of significant correlations for these variables are not in line with previous studies, e.g. performed by Mehta & Mehta (2018). As this study investigates a mediating effect of expertise integration on the relationship between team goal and team effectiveness, significant correlations with expertise integration are observed. A high and significant correlation is found between expertise integration and all qualitative elements of team effectiveness (team viability r= .81*,* p<.01; team satisfaction r=.72, p<.01*;* team perceived performance r=.78, p<.01). A high and significant correlation is found between team learning goal orientation and expertise integration *(*r=.87*,* p<.01*)* as well as between team performance prove goal orientation and expertise integration *(*r=-.44, p<.05*).* This might indicate the existence of an indirect mediating effect. Further analyses are needed to explore the nature and the direction of these relationships.

Although a multi-level measurement procedure, common method variance could not be ruled out. In addition, most of the correlation coefficients exceed the threshold of 0.3. Therefore, the model was tested for multicollinearity in the data (Llopis & Foss, 2015), by calculating Variance Inflating Factor (VIF)-scores. None of the variables exceeds the rule-of-thumb cut-off of 10 (highest VIF = 3.838 Expertise Integration). Appendix B5 shows the details of the VIF-scores.

Considering the correlation coefficients of the control variables, team cooperation, task interdependence and overall tenure show significant correlations. The low standard deviation of the control variables shown by the descriptive statistics indicate homogeneity. Because the research was conducted in one organization, it is assumed that there is a fairly homogeneous team composition. However, overall tenure differs in and between teams and correlates significantly. Therefore, task interdependence, team cooperation and overall tenure are included as control variables when testing the hypotheses.

Table 3: Overview Pearson's correlation coefficient among studied variables.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Team viability														
2	Team satisfaction	0.62**													
3	Team perceived performance	0.62**	0.63**												
4	Team objective performance	-0.05	-0.09	0.00											
5	Team learning goal orientation	0.66**	0.66**	0.65**	-0.35										
6	Team performance prove goal orientation	0.19	0.49*	0.54**	0.10	0.30									
7	Expertise integration	0.81**	0.72**	0.78**	-0.10	0.87**	0.44*								
8	Team size	0.21	0.40*	0.19	0.16	0.32	0.24	0.37							
9	Team cooperation	0.39	0.74**	0.35	-0.00	0.57**	0.44**	0.63**	0.36						
10	Team leadership	0.01	0.31	-0.01	-0.04	-0.03	0.50*	-0.02	0.31	0.24					
11	Task interdependence	0.28	0.43*	0.06	-0.38	0.28	0.16	0.17	-0.23	0.51*	0.22				
12	Education	0.40*	-0.04	0.42*	0.03	0.23	0.10	0.39	-0.14	-0.05	-0.32	-0.35			
13	Organizational tenure	-0.39	0.09	-0.13	0.23	-0.28	0.03	-0.25	-0.18	0.13	-0.16	0.17	-0.29		
14	Overall tenure	-0.60**	-0.45*	-0.47*	0.17	-0.55**	-0.26	-0.66**	-0.46**	-0.26	-0.36	0.07	-0.34	0.61*	
15	Salary scale	0.05	-0.13	-0.12	-0.04	-0.04	-0.08	-0.05	-0.57**	-0.01	-0.16	0.05	0.28	0.19	0.28

* P<0.05, **p<.01, ***p<.001

To explore difference between the four distinguished types of teams, Table 4 below shows scores per team.

Table 4: scores per team.

Construct	Teams of lecturers		Research teams		Program teams		Management teams	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Team Goal Orientation	*3.48*	*.38*	*3.84*	*.16*	*3.65*	*.22*	*3.48*	*.29*
Learning Goal orientation	*3.74*	*.45*	*4.20*	*.23*	*4.03*	*.15*	*3.90*	*.61*
Performance prove goal orientation	*3.08*	*.45*	*3.60*	*.25*	*3.07*	*.40*	*2.86*	*.20*
Expertise Integration	*3.88*	*.49*	*4.28*	*.28*	*4.12*	*.17*	*4.03*	*.46*
Team Effectiveness	*3.52*	*.24*	*3.72*	*.23*	*3.57*	*.17*	*3.35*	*.29*
Team viability	*3.05*	*.19*	*3.09*	*.12*	*3.12*	*.13*	*3.00*	*.29*
Team Satisfaction	*4.07*	*.42*	*4.10*	*.33*	*4.15*	*.22*	*4.00*	*.29*
Team perceived performance	*3.48*	*.34*	*3.85*	*.33*	*3.48*	*.20*	*3.13*	*.28*
Team objective performance	*3.87*	*.47*	*4.00*	*.50*	*3.50*	*.43*	*3.63*	*.18*

Note # teams: 15 teams of lecturers; 5 research teams; 3 program teams; 2 management teams.

Because of the small sample size (n=25) at team level (level 2), statistical power is insufficient to provide evidence for the main hypotheses. The within-group agreement across the respondent's ratings is tested by using the intraclass correlation coefficient (ICC2) (Biemann et al., 2012; Koo & Li, 2016; LeBreton & Senter, 2008). Considering the $ICC2_{(144)}$ of the main constructs Team Effectivity $ICC2_{(144)}$ = .72; Expertise Integration $ICC2_{(144)}$ = .86 and Goal Orientation $ICC2_{(144)}$ =.75 and the presented data in table 4, there is no reason to expect significantly different results between the tests at individual level and the team level. There is no cluster formation, but good reliability of homogeneity. Therefore, regression analysis and additional tests are performed at individual level (level 1). Detailed information including scatterplots of the effect of team goal orientation on expertise integration and the effect of expertise integration on team effectiveness by team type is provided in Appendix B6.

Testing

Below the results of the tested models in order to provide evidence for the main hypotheses are presented. To test the hypotheses, hierarchical multiple regression is used. First, the results of the linear regression analyses for effects regarding to overall team effectiveness are shown in Table 5. Table 6 shows the results of the linear regression analyses for effects regarding to expertise integration. Table 7 shows the results of the linear regression analyses for effects regarding to the different elements of team effectiveness, team viability, team satisfaction, team perceived performance and team objective performance. After presenting the results of the tested models the main findings are highlighted, in order to answer whether or not support for the hypotheses is found.

Table 5: Regression results of team effectiveness.

Outcome Variable: Team Effectiveness	Model 1	Model 2	Model 3
	Step 1		
Control Variables			
Task interdependence	.06	.03	.05
Team cooperation	.36***	.23***	.14**
Overall tenure	-.00	-.03	-.02
	Step 2		
Independent variables			
Team learning goal orientation		.20***	.13***
Team performance prove goal orientation		.03	.02
	Step 3		
Mediator			
Expertise integration			.17***
R-squared	.53	.63	.66
Adjusted R-squared	.52	.62	.64
F-statistic	52.09***	46.95***	43.44***

*Note: N=144 respondents *p<.05; **p<.01; ***p<.001*

Table 6: Regression results of Expertise Integration

Outcome Variable: Expertise Integration	Model 1	Model 2
	Step 1	
Control Variables		
Task interdependence	-.04	-.08
Team cooperation	.82***	.56***
Overall tenure	-.01**	-.01**
	Step 2	
Independent variables		
Team learning goal orientation		.42***
Team performance prove goal orientation		.11
R-squared	.62	.74
Adjusted R-squared	.61	.73
F-statistic	76.80***	78.33***

*Note: N=144 respondents *p<.05; **p<.01; ***p<.001*

Table 7 below shows the results of the linear regression analyses for the distinguished elements of team effectiveness, (a) team viability, (b) team satisfaction, (c) team perceived performance and (d) team objective performance.

Table 7: Regression results of elements of team effectiveness

Outcome Variable:	Team Viability	Team Satisfaction	Team Perceived Performance	Team Objective Performance
Step 1				
Control Variables				
Task interdependence	.05	.15**	.05	-.38
Team cooperation	.09	.64***	.57***	.13*
Overall tenure	.00	-.01	-.00	-.01**
Step 2				
Control Variables				
Task interdependence	.05	.13**	.01	-.05
Team cooperation	.06	.48***	.36***	.02
Overall tenure	.00	-.00	.00	-.10*
Independent variables				
Team learning goal orientation	.04	.30***	.31***	.15*
Team performance prove goal orientation	.01	-.05	.09	.08
Step 3				
Control Variables				
Task interdependence	.05	.15***	.04	-.06
Team cooperation	.00	.32***	.17	.05
Overall tenure	.00	-.00	.00	-.01*
Independent variables				
Team learning goal orientation	.00	.18**	.17*	.18*
Performance prove goal orientation	.00	-.07	.07	.09
Mediator				
Expertise integration	.10	.29***	.35***	-.07
Step 1 R-squared	.07*	.61***	.40***	.08**
Step 2 R-squared	.08*	.67***	.49***	.14***
Step 3 R-squared	.09*	.70***	.52***	.14**

*Note: N=144 respondents *p<.05; **p<,01; ***p<.001*

Table 8: Results of the linear regression analysis for team effectiveness.

Outcome Variable: Team effectiveness	Model 1	Model 2
Step 1		
Control Variables		
Task interdependence	.06	.07
Team cooperation	.36***	.14**
Overall tenure	-.00	-.01
Step 2		
Independent variable		
Expertise Integration		.27***
Step 1 R-squared	.53	.62
Adjusted R-squared	.52	.61
F-statistic	52.09***	57.78***

*Note: N=144 respondents *p<.05; **p<.01; ***p<.001*

To test the effect of team goal orientation on team effectiveness, a regression analysis is performed. Details are presented in Table 5. In the first step the regression model includes the control variables task interdependence, team cooperation and overall tenure. The explanatory power of the control variables in this model is high, approximately half of the observed variation can be explained by the control variables (R^2=.53, p<.001). This is not in line with previous results shown by Mehta & Mehta (2018) (R^2 varies from .07 to .13, p >.05). This is mainly caused by team cooperation. A more detailed review of team effectiveness shows that this strong effect mainly affects team satisfaction (R^2=.61, p<.001) and to a lesser extent to team perceived performance (R^2=.40, p<.001). Table 7 presents the details. Overall tenure shows a negative effect which is significantly to expertise integration and team objective performance. Task interdependence only relates significantly to team satisfaction.

Hypothesis 1 predicts the relationship between team goal orientation and team effectiveness. In the second step (Table 5, Model 2) the independent variables are entered to test for first order association. Team learning goal orientation is significantly related to team effectiveness (B=.20 p<.001). No significant relationship is found between team performance prove goal orientation and team effectiveness. Based on these results, H1a is supported and H1b is rejected. Bunderson & Sutcliffe (2003) found a curvilinear relationship between team learning goal orientation and team performance. Because of a significant linear relationship (H1a), testing for a curvilinear relationship is not necessary.

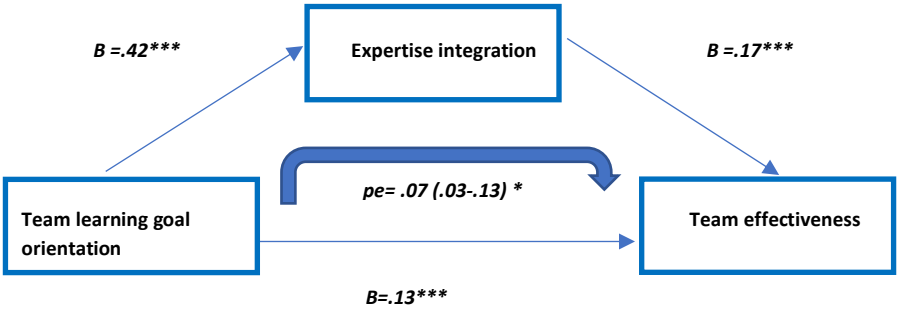
Hypothesis 2 predicts the relationship between team goal orientation and expertise integration. Table 6, expertise integration Model 2 only shows a significant relationship between team learning goal orientation and expertise integration (*B*=.42 *P*<.001). Therefore, H2a is supported and H2b is rejected.

Hypothesis 3 predicts the relationship between expertise integration and team effectiveness. The results in table 8 show the direct effect of expertise integration on team effectiveness, without the influences of the other independent variables. Expertise integration is significantly related to team effectiveness (*B*=.27, *p*<.001). A more detailed review of a multiple regression analysis on the four elements of team effectiveness shows a significant relationship between expertise integration and team satisfaction (*B*=.29, *p*<.001) and between expertise integration and team perceived performance (*B*= .35 *p*<.001). Therefore, H3 is supported.

H4a predicts that expertise integration will mediate the relationship between team learning goal orientation and team effectiveness. To test the mediating effect, the bootstrapping test model 4 is used, based on Hayes (2013). Bootstrapping involves repeated resampling (1000 bootstrap samples) from the dataset to estimate an empirical approximation of the sampling distribution of the indirect effects. Bootstrapping has been frequently used in former research to test mediation (Gong et al., 2013; Nederveen Pieterse et al., 2011). All tests are accounting for control variables.

The test indicates a significant relationship (*B*=.42*, se*=.05*, t*=7.71*; p*<.001) between team learning goal orientation and expertise integration and a significant relationship between expertise integration and team effectiveness (*B*=.17*, se*=.05*, t*=3.34*, p*<.001). The direct effect of team learning goal orientation on team effectiveness is significant (*B*=.13*, se*= .04, *t*=3.40, *p*<.001) as well as the indirect relationship that team learning goal orientation had with team effectiveness via expertise integration (*point estimate* =.07*; SE* =.04*; 95%; CI =* .03 to .13*, not containing zero).* Full mediation can be concluded when the specific indirect effect of the interaction on the dependent variable through the mediator differs from 0 and the total (direct and indirect) effect of the interaction on the dependent variable differs from 0, but the direct effect of the interaction on its own does not differ from 0. The direct effect of team goal orientation with team effectiveness differs from 0 (*B*=.13, *p*<.001), showing partial mediation. Therefore, these results provide evidence for a mediating effect of expertise integration on the relationship between team learning goal orientation and team effectiveness and Hypothesis 4a is supported. Figure 2 below shows the details.

Figure 2: causal mediation analysis of team learning goal orientation on team effectiveness via expertise integration



The integrated approach of this study requires a more detailed review of the mediating effect of expertise integration on the distinguished elements of team effectiveness. The results presented above and in Appendix B7 show a significant partial mediating effect between team learning goal orientation and team satisfaction via expertise integration: direct effect (*B*=.18, *p*=<.001), indirect effect (*point estimate* =.11; *SE* =.04; *95%; CI* = .05 to .20*, not containing zero*). And between team learning goal orientation and team perceived performance via expertise integration: direct effect (*B*=.17*, p*=<.05), indirect effect (*point estimate* =.15*; SE* =.05; *95%; CI* = .07 to .27*, not containing zero*). Although results show a significant direct effect of team learning goal orientation on objective team performance, no significant indirect effect is stated (*point estimate* = -.18*; SE* =.04*; 95%; CI* =- .11 to .06). No other mediating effects are found.

H4b predicts that expertise integration will mediate the relationship between team performance prove goal orientation and team effectiveness. As Table 5 Model 2 shows, the relationship between team performance prove goal orientation and expertise integration is not significant. There is a significant relationship between expertise integration and team effectiveness (*B*=.26, *se*=.05, *t*=5.67, *p*<.001). Despite the fact that no significant direct effect was found of the relationship between team performance prove goal orientation and team effectiveness (*B*=.03, *se*=.03*, t*=1.09*, p*=.28), the indirect effect via expertise integration was significant (*point estimate* =.03*; SE* =.01*; 95%; CI* = .01 to .06, *not containing zero).* Because there is no significant direct effect, there is full mediation. Figure 3 below shows the details. Appendix B8 shows a complete overview of the results of the bootstrapping test model 4.

Figure 3: causal mediation analysis of team performance prove goal orientation on team effectiveness via expertise integration

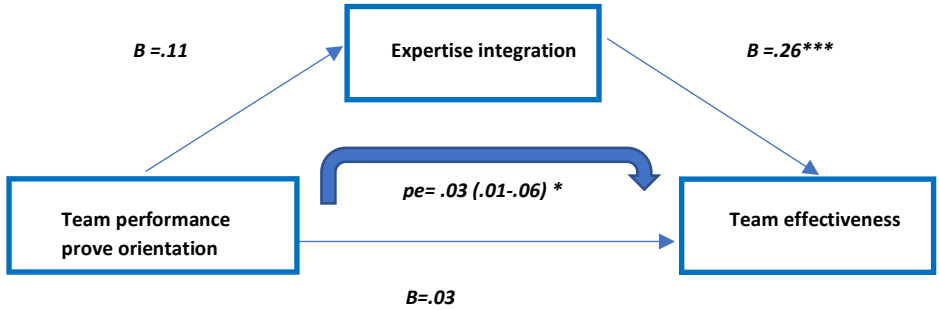


Table 9 below shows the results of the hypothesis tests. In case of team learning goal orientation, the results provide significant support for the proposed idea that expertise integration is the main explanatory mechanism through which individual expertise leads to team effectiveness. In the next section the main outcomes are summarized and discussed, including limitations and managerial implications.

Table 9: Summary of hypothesis tests

Hypothesis	Hypothesized effect	Supported	B (t-value)
H1a: Team learning goal orientation → team effectiveness	+	Yes	.20*** (5.75)
H1b: Team performance prove goal orientation → team effectiveness	+	No	.03 (1.25)
H1c: Team performance avoid goal orientation → team effectiveness	-	*not examined*	
H2a: Team learning goal orientation → expertise integration	+	Yes	.42*** (7.40)
H2b: Team performance prove goal orientation → expertise integration	+	No	.11 (1.47)
H2c: Team performance avoid goal orientation → expertise integration	-	*not examined*	
H3: Expertise integration → team effectiveness	+	Yes	.27*** (3.20)
Mediation hypothesis			
H4a: Team learning goal orientation → team effectiveness	Mediation via expertise integration	Partial mediation	.07*
H4b: Team performance prove goal orientation→ team effectiveness	mediation via expertise integration	Full mediation	.03*

* P<0.05, **p<.01, ***p<.001

5. Discussion

Extending previous research (Mehta et al., 2009; Mehta & Mehta, 2018) a more in-depth analysis of the impact of team goal orientation and intrateam expertise integration on effectiveness in teams is examined in this thesis. The central question answered in this study is: *what is the relationship between team goal orientation and team effectiveness and how is this mediated by intrateam expertise integration when working on non-routine tasks?* This study responds to the call of several researchers to examine this topic in a real business setting to investigate whether team goal orientation varies as a function of team context and outcome. The empirical setting consists of teams who are jointly responsible for executing non-routine knowledge work and have been working together for a long time in the knowledge-based industry. Results show the importance of team learning goal orientation for team effectiveness, as well as expertise integration. Although the examined teams use learning and performance prove goal orientations, learning goal orientation has a stronger influence on team effectiveness through expertise integration. It positively stimulates team satisfaction and team perceived performance. The direct relationship between team performance prove goal orientation and team effectiveness via expertise integration is not found. These results differ from the results of prior studies and confirm that different team goal orientations predict distinct dimensions of team effectiveness. Additionally, the results demonstrate that teams with different team goal orientations use distinct mechanisms to achieve team effectiveness, qualitative as well as quantitative. The results, including managerial implications and limitations, are discussed below.

Theoretical implications

Setting goals in organizations improves organizational effectiveness, which leads to better performance. Goal orientation theory discusses how learning and performing (prove or avoid) goal orientations influence the attitudes and behavior of employees in work situations in organizations. Team goal orientation leads to a mutually agreed set of beliefs among team members, who then direct their actions and deliver outcomes as a result. These shared team perceptions determine how effective a team will be in achieving its outcomes. This research assumes A 3-dimensional construct, consisting of a team learning goal orientation, a team performance prove goal orientation and a team performance avoid goal orientation. Mehta & Mehta, (2018) justified the conception of team goal orientation as a 3-dimensional construct in their study.

Reliability and validity of the performance avoid goal orientation construct.

Although a frequently used four item performance avoid goal orientation measure is used, based on VandeWalle (1997), the construct cannot be considered reliable and valid for measuring performance avoid goal orientation. Previous studies made use of a laboratory setting, with student samples (Mehta et al., 2009; Mehta & Mehta, 2018; Nederveen Pieterse et al., 2011). However, these studies state that findings in the laboratory are often replicated in the field and there is no reason to expect students to differ from other populations in their behavior in achievement settings, there may be a difference in the interpretation of the questions in the questionnaire between students and professionals. Participating in research in a business (and political) setting can lead to fear of personal consequences among participants. It is possible that people with a performance avoid goal orientation do not fill in the questionnaire, or start it, but quit because they fear that their anonymity is not guaranteed, or they manipulate and give desired answers. It might be that all three situations have occurred, and that the latter situation is the cause of the construct's lack of validity and reliability.

Furthermore, theory and research on goal orientation in teams has been hindered due to questions regarding the dimensionality and measurement of the goal orientation construct at the team level. Even though goal orientation theory and empirical evidence at the individual level have established that there are three types of goal orientations (learning, performance prove and performance avoid) (Dweck, 1986; VandeWalle, 1997), a lot of previous team based studies have measured team goal orientation as a two-dimensional construct (Bunderson & Sutcliffe, 2003; Gong et al., 2013; LePine, 2005; Nederveen Pieterse et al., 2011; Porter, 2005). The two dimensional construct consists of team learning goal orientation and team performance goal orientation, which consist of both striving for a positive evaluation and avoiding a negative evaluation. The fact that a University of applied sciences fits better with the 2-dimensional construct is expected to be caused by the fact that it is a not for profit organization, which is funded by the government, where risk averse behaviour might be less relevant. New research has recently developed a 4-dimensional view of goal orientation. These four dimensions have predictive validity on multiple team processes above and beyond goal orientation (Porter et al., 2014). New insights may be provided by further research, in which the 4-dimensional construct is applied.

The starting point of this study is a situational view of goal orientation theory. State goal orientation differs from its trait counterpart in its dynamic nature and responsiveness to situational influences (Button et al., 1996; Dragoni, 2005). COVID-19 caused unforeseen changes, with a huge impact on the whole world, drastic measures, which were taken by both local governments as well as the

organization itself. The questionnaire of this study was conducted four weeks after the start of the intelligent lockdown that was caused by the global COVID-19 crisis. This has led to a changing task context, in which the team's established routine did not work, which could have led to a different mindset and goal orientation of the respondents. A high sense of urgency can explain another (interpretation of performance avoid) goal orientation.

The explanatory power of the control variables

In the first step the regression model includes the control variables task interdependence, team cooperation and overall tenure. The explanatory power of the control variables in this model is high, approximately half of the observed variation can be explained by the control variables (*R^2=.53, p<.001*). This is mainly caused by team cooperation. This is not in line with previous results shown by Mehta & Mehta (2018) (R^2 varies from .07 to .13, p >.05). This adds valuable insights to the emerging literature regarding mechanisms that stimulate expertise integration, leading to even greater effectiveness in teams. Prior studies are based on temporary teams formed for a single semester of for a temporary project. This study concerns teams who work together permanently and have been working together for a long time. It might be that the degree of cooperation intensifies the longer a team operates in the same composition. A more detailed review of the distinguished elements of team effectiveness shows that team cooperation mainly affects team satisfaction and to a lesser extent team perceived performance. These results add valuable insights to the emerging literature confirming that the impact of team goal orientation varies as a function of team context and outcome.

Team goal orientation and team effectiveness.

Recent studies show inconclusive findings regarding the effect of goal orientation on team effectiveness. Some scholars argue that team learning goal orientation has a nonsignificant effect on team effectiveness (e.g. Mehta et al., 2009; Payne et al., 2007; Porter, 2005). Based on organizational learning literature they state that learning oriented teams that focus on seeking new knowledge and developing skills, can be derived from actual task accomplishment. Overemphasizing team learning can result in unproductivity and lower team effectiveness. Partly in line with Mehta & Mehta (2018), Cacioppe & Stace (2009) and Seijts et al. (2004) the results of this study show a significant positive relationship between team learning goal orientation and team effectiveness, and support existing goal orientation theory. An explanation for the different results found might be given by the differences in the context of the empirical setting. Edmondson (1999) state that a collective learning climate influences learning oriented behavior in organizations and work teams. A University of Applied Sciences has a positive collective learning climate, in which (team)learning is stimulated. The examined teams are working on non-routine tasks and are executing exploratory learning activities, which

involve constantly trying to innovate their work practices and discovering new opportunities for task completion, using various ideas and enhancing their effectiveness. Prior research was based on students in a laboratory setting. It is likely that these students have set their performance goals only because their grades were depending on team performance and not on learning, which resulted in a non-significant team learning orientation. In addition, a team learning goal orientation needs a long time to evolve (Yeo & Neal, 2004) and its effect might not be visible in short term focused student teams or in temporary project-based teams.

Although team learning orientation appears to have a significant positive effect on three elements of team effectiveness, no significant relationship between team learning goal orientation and team viability was found. This was unexpected. Being jointly responsible for executing the primary process working together for a long time does not lead to the belief in the team's capacity to continue working successfully in future. Maybe this assumption is incorrect because these teams have a strong learning goal orientation. Sharing and combining knowledge decreases the longer people work in the same team composition. People know each other's vision and expertise and creating new ideas and new expertise becomes less effective. These results reveal how different goal orientations predict distinct dimensions of team effectiveness.

A team performance prove goal orientation consists of being competitive and striving to outperform others. Teams operating in an environment of high achievement expectations and performance-based rewards might benefit from a performance prove goal orientation. Team goal orientation is operationalized as a state, influenced by a team's climate. Results show that a University of Applied Sciences does not have a performance-oriented climate; the respondents scored a mean of 3.1 (close to neutral) on team performance prove goal orientation. Therefore, it is not surprising that no significant effects on team effectiveness were found. A significant relationship with team performance (perceived as well as objective) was to be expected, given that performance-oriented teams are highly focused on completing the task as efficiently as possible and proving competence. Team viability and team satisfaction are no preconditions for excellence. The empirical context might not be suitable to test the effects of performance prove team goal orientation on team effectiveness.

It is also important to consider the possibility that goal orientation works differently when comparing the individual to a team level. On one hand, group processes as well as interactions between team members and cooperation can facilitate the adoption of positive learning and performance orientation especially in permanent teams. On the other hand, diversity in goal orientation between team members can negatively influence group processes by disrupting group dynamics and

effectiveness (Nederveen Pieterse et al., 2011). Groupthink might also play an important role in this (Homan et al., 2007). Addressing these issues may provide new insights.

The relationship between team goal orientation and expertise integration

Expertise integration is conceptualized as a process in which team members actively share and combine their expertise, to create new expertise. This results in gaining new learning, in other words, the primary goal of learning oriented teams. Learning oriented team members are characterized by the desire to achieve a thorough, rich and accurate understanding of the team's tasks, a desire that motivates systematic information search, processing, exchange and integration (Gong et al., 2013). Considering these facts, it is not surprising that team learning goal orientation iss significantly, positively related to expertise integration. This is in line with existing expertise integration theory. Performance prove-oriented goal orientation leads to exploitative learning, which is beneficial for teams that carry out complex cognitive tasks that require individual members to share and build on each other's expertise. Expertise integration is not a goal, but a means to an end: efficient task fulfillment. Despite aforementioned results, no significant relationship between performance prove-oriented goal orientation and expertise integration was found. This does not support existing expertise integration theory and contributes to fill a knowledge gap in existing literature. Other processes, like team planning may be utilized to achieve team goals.

It is not self-evident that team goal orientation always impacts expertise integration. This will depend on organizational climate. Interesting to mention is the negative significant relationship between expertise integration and (overall) tenure. The social exchange theory (Blau, 1964) might give an explanation: team members tend to be less willing to integrate expertise when, in their perception, the benefits do not outweigh the disadvantages. The more work experience, the more expertise, the less to learn from team members with less work experience and therefore less expertise.

The relationship between expertise integration and team effectiveness

Expertise integration entails activities that require team members to actively interact with each other, giving team members the sense that they collaborate well to solve problems and demonstrating the competence of the team and its team members. Expertise integration increases the chance that team members will continue working together in the future and makes team members feel important, because they contribute their own expertise to achieve team goals. This enhances team viability, team members' satisfaction and eventually team performance. The results of this study are inconsistent with previous studies because no significant relationship was found between expertise integration

and team viability and between expertise integration and team objective performance. As mentioned above, sharing and combining knowledge might decrease the longer people work in the same team composition. People know each other's vision and expertise and creating new ideas and new expertise becomes less effective, resulting in less confidence in the team's future. Interestingly, these results demonstrate that expertise integration is strongly associated with the qualitative dimensions of team effectiveness, team satisfaction and team perceived performance. Such people-oriented outcomes are important conditions for long term sustainable collaboration success, given that the examined teams are permanent. These results confirm the added value of the integrated approach to team effectiveness. Different types of goal orientation may influence different dimensions of team effectiveness, whether or not through expertise integration. These additional insights can be used for developing more predictive models regarding expertise integration, helping teams to become more effective.

Expertise integration as a mediator

This study demonstrates that team goal orientation is positively related to expertise integration, which acts as a mediator in enhancing team effectiveness. There is a partial mediating effect, which indicates the likelihood of other intervening processes or moderating factors to achieve team effectiveness.

Expertise integration partial mediates the effect of team learning goal orientation on team effectiveness. An in-depth analysis of the underlying elements of team effectiveness shows a partial mediating effect between team learning goal orientation and team satisfaction via expertise integration and a partial mediating effect between team learning goal orientation and team perceived performance via expertise integration. It appears that interaction and team cooperation, stimulated by expertise integration may foster team satisfaction and team perceived performance. This may be explained from social exchange perspective, a learning goal-oriented team will engage in expertise integration if it leads to new learning and finally to gaining new expertise. The more expertise integration, the more team learning, the more team satisfaction and perceived performance. These results help to underscore the role of expertise integration as a mediating process between team learning goal orientation and team effectiveness, a previously unexplored relation.

Expertise integration full mediates the effect of team performance prove goal orientation on team effectiveness. What is not visible in the direct relationship becomes visible because of the expertise integration process. This may be explained from social exchange perspective too: a performance prove goal-oriented team work together to fulfill the task as efficient as possible. Team members will engage

in expertise integration only if it leads to benefits in task fulfillment and involves minimum effort. Other processes, like team planning may be utilized to achieve their goals.

In this study evidence was found that learning oriented teams enhance team effectiveness through expertise integration. Expertise integration is not THE intervening process, but one of the processes that successfully can be deployed. Further research will have to show in which combination of intervening processes maximum team effectiveness can be achieved.

Managerial implications

Knowledge work, which is defined as work that requires the intellectual capital of skilled professionals, is increasingly becoming dependent on teams in which the expertise of several individuals must be integrated to create new knowledge, creativity and true innovation to solve complex problems. These integrations are prominently necessary in knowledge-based industries, where continually changing customer demands require adaptive and flexible answers and work is complex and non-routine (Qu & Liu, 2017). This study is based on an integrated approach, in which different aspects of team effectiveness in relation to each other provide a broad and realistic view. Not only objective performance is examined, but qualitative aspects as team viability, team satisfaction and team perceived performance as well. These qualitative aspects are predictors of long-term sustainable success and can be regarded as preconditions. If these preconditions are met, this will lead to good objective performance.

The results of this study show that members of learning oriented teams, who use expertise integration to enhance team effectiveness, are satisfied and positive about their perceived performance. Management can contribute to this win-win situation for all stakeholders by stimulating a positive learning climate and supporting learning goals. But the extent to which learning should be encouraged within teams requires an informed management decision (Bunderson & Sutcliffe, 2003). Balance between learning goals and performance prove goals is important. Overemphasizing exploratory learning can lead to poor team performance, overemphasizing stimulating team performance by stimulating exploitative learning may lead to unsatisfied team members resulting in lower long-term team effectiveness.

Until now, managers have mainly used technical tools like knowledge management systems, blueprints of how to solve problems and discussion forums to enable expertise integration. Although useful in collecting and sharing existing knowledge, these tools are impersonal and unsuitable for creating new knowledge. This study shows that influencing the qualitative aspects of team

effectiveness may be more effective. Managing a team's perception of a positive team climate is an important mean to stimulate expertise integration as well. Interventions such as an open dialogue with team members about their ability and performance, feedback and reflection systems and setting learning goals can contribute to foster these perceptions and stimulate intended outcomes.

Limitations and direction for future research.

The present study is not without limitations. First, a cross sectional measurement is used and thus does not establish causality in relationships. It is possible that a team learning goal at time 1 influences expertise integration at time 2, which further reinforces team learning at time 3. Therefore, team effectiveness might ask for a more longitudinal prove, because a team learning goal orientation needs a long time to evolve (Yeo & Neal, 2004) and expertise integration might take more time to have visible impact. Thus, future researchers are encouraged to conduct longitudinal studies of the relationships examined in this study. This will mitigate the potential for common method bias.

Second, due to several reasons, the response of the questionnaire was low, resulting in only 25 teams to examine. A lack of statistical power meant that part of the analysis had to take place at an individual level, while the entire research was set up for analysis on team level. Future research on teams in the knowledge-based industry is needed with enough statistical power to generalize. This will enable statistical analyses on team level and will allow improvement of external validity and will contribute to the generalization of the main findings.

Third, it would be prudent to test the model with different types of teams to deepen the understanding of the role of team goal orientation in team effectiveness. Team performance avoidance goals might be adopted only in exceptional situations where teams are rewarded for minimizing mistakes, e.g. aviation (pilots) or health care (surgeons). Addressing these issues may provide new insights.

Fourth, for various reasons, explained in the discussion section, the construct of team performance avoid goal orientation is not reliable and valid. Resulting in the use of a 2-dimensional construct, consisting of team learning goal orientation and team performance orientation. This 2-dimensional construct is used in many studies (e.g. DeShon et al., 2004; Nederveen Pieterse et al., 2011). Not including a performance avoid measure does not disqualify the current findings for learning goal orientation and performance prove goal orientation. Nevertheless, examining effects of expertise integration in performance avoid orientation would have added value to research the effect of goal orientation on team effectiveness. If the hypothesis is correct that teams with a performance avoid

goal orientation do not use expertise integration to enhance their team effectiveness, it is interesting to examine which mediating process will be used.
New research has recently developed a 4-dimensional view of goal orientation. These four dimensions have predictive validity on multiple team processes above and beyond goal orientation (Porter et al., 2014). Further research in which the 4-dimensional construct is applied may provide new insights.

Finally, the questionnaire was conducted four weeks after the intelligent lockdown that was caused by the COVID-19 pandemic. This unforeseen change has led to a changing task context, in which the team's established routine did not work. Creating and providing online education necessitated expertise integration to survive. This could have led to a different mindset and goal orientation of the respondents. So, this could have influenced the main findings of this study. Repeating this study in a post COVID-19 period might yield different results.

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APPENDIX A: Measures questionnaire.

1) Measure goal orientation

In welke mate ben je het eens bent met de volgende stellingen voor het door jou gekozen team? (1 = helemaal mee oneens, 5 = helemaal mee eens)	1	2	3	4	5
Learning goal orientation					
1. In mijn team houden we van uitdagende en moeilijke opdrachten, zodat we nieuwe dingen leren.	0	0	0	0	0
2. In mijn team zijn we bereid risico's te nemen om nieuwe ideeën te ontwikkelen en te ontdekken wat werkt.	0	0	0	0	0
3. Als we een probleem moeten oplossen, houden we ervan verschillende benaderingen/gezichtspunten uit te proberen, om te kijken wat het beste werkt.	0	0	0	0	0
Performance prove goal orientation					
4. In mijn team voelen we ons erg goed als we weten dat we beter gepresteerd hebben dan andere teams.	0	0	0	0	0
5. In mijn team genieten we als andere teams weten hoe goed ons team presteert.	0	0	0	0	0
6. In mijn team werken we het liefst aan taken waarbij we onze expertise aan andere teams kunnen tonen.					
Performance avoid goal orientation					
7. In mijn team is het vermijden om gezien te worden als incompetent belangrijker dan het aanleren van nieuwe competenties.					
8. In mijn team maken we ons zorgen als uit de resultaten van het uitvoeren van een taak kan blijken dat we niet capabel zijn.					
9. In mijn team vermijden we situaties, waarin we mogelijk slecht presteren.					

2) Measure expertise integration

In welke mate ben je het eens bent met de volgende stellingen? (1 = helemaal mee oneens, 5 = helemaal mee eens)
1. In ons team lossen we problemen op door nieuwe kennis en/of ervaring te combineren met wat we al weten.
2. Leden van ons team hebben verschillende kennis en ervaringen, met behulp waarvan we gezamenlijk nieuwe onderwijsconcepten ontwikkelen.
3. Leden van ons team wisselen kennis en ervaringen uit en leren van elkaar.
4. Teamleden wisselen kennis en ervaringen uit om problemen te analyseren en op te lossen.

3) Measure team effectiveness

In welke mate ben je het eens bent met de volgende stellingen? (1 = helemaal mee oneens, 5 = helemaal mee eens)
Team viability
1. Mijn team werkt als een eenheid samen.
2. Ik wil onderdeel blijven uitmaken van dit team.
3. Als ik naar een ander team zou kunnen, zou ik dat doen.
Team satisfaction
4. Ik vind het leuk om met mijn teamleden samen te werken.

5. Over het algemeen ben ik tevreden met de prestaties van mijn team..
Team perceived performance
6. Als we naar prestaties kijken is ons team succesvol.
7. Dit team heeft alle teamdoelen bereikt.
8. De output van ons team is van hoge kwaliteit.

In welke mate ben je het eens bent met de volgende stellingen? **(1 = helemaal mee oneens, 5 = helemaal mee eens)**
Team objective performance (ingevuld door de team verantwoordelijke)
1. Over het algemeen ben ik tevreden over de prestaties van dit team.
2. Als ik naar de prestaties kijk is dit team succesvol.
3. Dit team heeft alle teamdoelen bereikt.
4. De output van dit team is van hoge kwaliteit.

4) Measure control variables

In welke mate ben je het eens bent met de volgende stellingen? **(1 = helemaal mee oneens, 5 = helemaal mee eens)**
Team cooperation.
1. In ons team helpen we elkaar om de taken zo effectief mogelijk uit te voeren.
2. In ons team luisteren we naar elkaars ideeën.
3. Teamleden nemen regelmatig deel aan teambijeenkomsten.
Team leadership
4. Er is een informele leider in ons team.
Task interdependence.
5. Ik werk gewoonlijk aan teamtaken en niet aan individuele taken.

APPENDIX B: Additional results analyses

1) Results ICC test at team level

Table A: Results ICC test at team level

Teamnr	ICC	Lower bound	Upper bound	# Team-members
1	.718	.460	.865	3
2	.657	.403	.827	6
3	.916	.862	.955	8
4	.515	.141	.757	5
5	.668	.412	.833	5
6	.783	.629	.889	8
7	.708	.497	.852	7
8	.832	.797	.915	6
9	.906	.840	.952	8
10	.883	.797	.941	6
11	.540	.215	.765	8
12	.818	.677	.909	5
13	.760	.590	.877	8
14	.703	.431	.857	3
15	.892	.803	.947	4
16	.824	.694	.911	6
17	.898	.820	.949	5
18	.853	.743	.926	6
19	.680	.449	.837	7
20	.885	.796	.942	5
21	.741	.529	.872	4
22	.831	.692	.916	4
23	.852	.737	.926	5
24	.903	.823	.952	4
25	.907	.835	.953	5

Note: selection: 2-way random, average measure and consistency

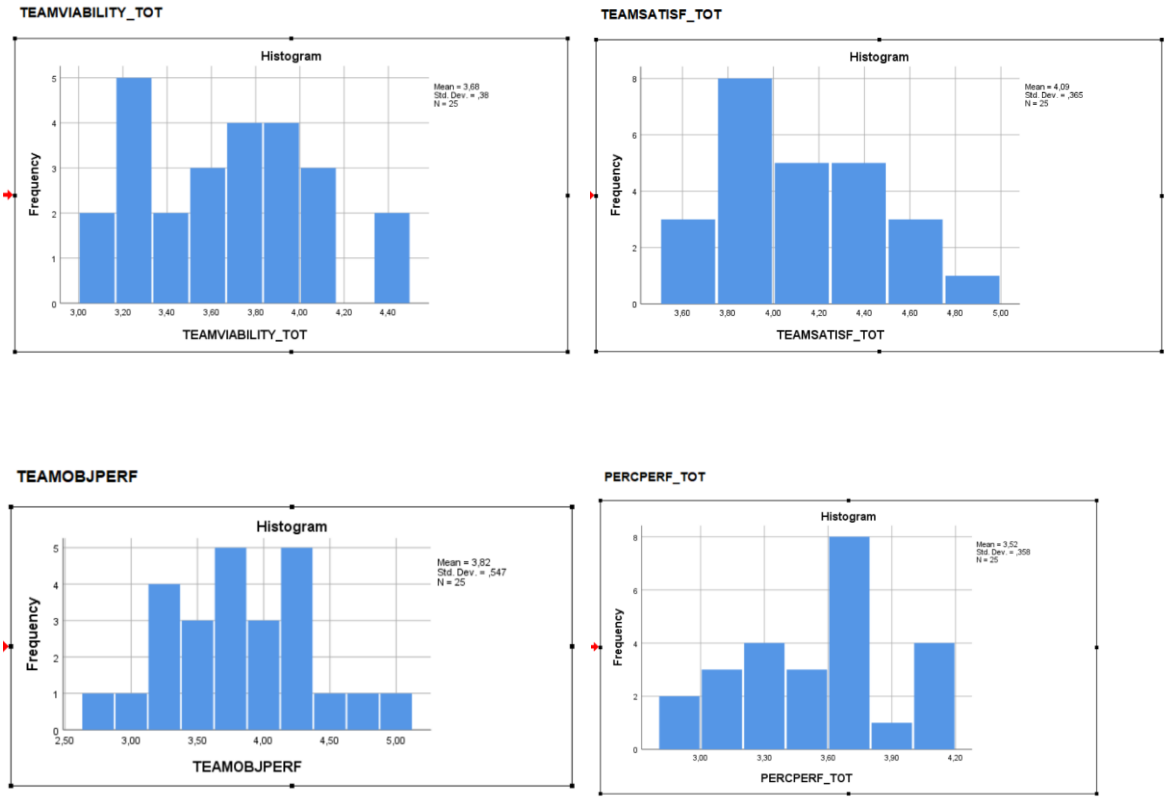
2) Results Shapiro- Wilk test

Table B: Results tests assessing normal distribution

Construct	W-value	P-value	Skewness	Kurtosis
Team Viability	0.975	0.766	0.109	-0.712
Team satisfaction	0.969	0.631	0.334	-0.300
Team perceived performance	0.967	0.573	-0.096	-0.744
Team objective performance	0.976	0.805	0.155	-0.259

In order to prove normal distribution, values between -3 and +2 for skewness and values between -7 and +7 for kurtosis, are considered acceptable. These results show data fit the criteria for testing based on a normal distribution.

3) Histograms



4) Results Spearman correlation tests executed at team level

Correlations

			EI_TOT	TLGO_TOT	PAGO_TOT	T_OPERF
Spearman's rho	EI_TOT	Correlation Coefficient	1,000	,826**	,402*	-,075
		Sig. (2-tailed)	.	,000	,046	,721
		N	25	25	25	25
	TLGO_TOT	Correlation Coefficient	,826**	1,000	,324	-,264
		Sig. (2-tailed)	,000	.	,114	,202
		N	25	25	25	25
	PAGO_TOT	Correlation Coefficient	,402*	,324	1,000	,090
		Sig. (2-tailed)	,046	,114	.	,668
		N	25	25	25	25
	T_OPERF	Correlation Coefficient	-,075	-,264	,090	1,000
		Sig. (2-tailed)	,721	,202	,668	.
		N	25	25	25	25

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

			EI_TOT	TLGO_TOT	PAGO_TOT	T_OPERF
Spearman's rho	EI_TOT	Correlation Coefficient	1,000	,826**	,402*	-,075
		Sig. (2-tailed)	.	,000	,046	,721
		N	25	25	25	25
	TLGO_TOT	Correlation Coefficient	,826**	1,000	,324	-,264
		Sig. (2-tailed)	,000	.	,114	,202
		N	25	25	25	25
	PAGO_TOT	Correlation Coefficient	,402*	,324	1,000	,090
		Sig. (2-tailed)	,046	,114	.	,668
		N	25	25	25	25
	T_OPERF	Correlation Coefficient	-,075	-,264	,090	1,000
		Sig. (2-tailed)	,721	,202	,668	.
		N	25	25	25	25

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

			LEARNINGGO_TOT	PERFAPPRGO_TOT	EI_TOT	TEAMOBJPERF
Spearman's rho	LEARNINGGO_TOT	Correlation Coefficient	1,000	,324	,826**	-,264
		Sig. (2-tailed)	.	,114	,000	,202
		N	25	25	25	25
	PERFAPPRGO_TOT	Correlation Coefficient	,324	1,000	,402*	,090
		Sig. (2-tailed)	,114	.	,046	,668
		N	25	25	25	25
	EI_TOT	Correlation Coefficient	,826**	,402*	1,000	-,075
		Sig. (2-tailed)	,000	,046	.	,721
		N	25	25	25	25
	TEAMOBJPERF	Correlation Coefficient	-,264	,090	-,075	1,000
		Sig. (2-tailed)	,202	,668	,721	.
		N	25	25	25	25

**. Correlation is significant at the 0.01 level (2-tailed).

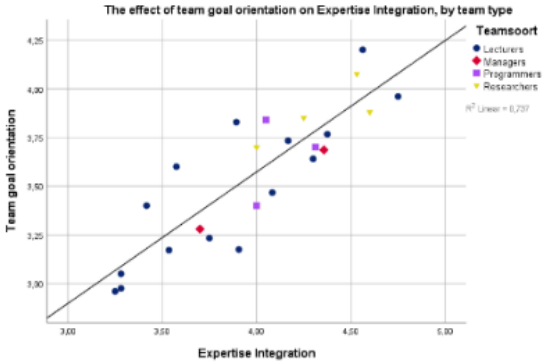
*. Correlation is significant at the 0.05 level (2-tailed).

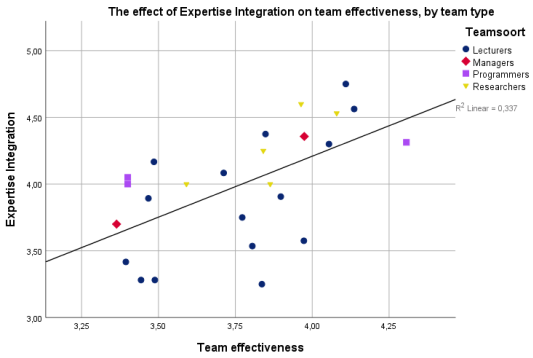
5) Results multicollinearity test (VIF scores)

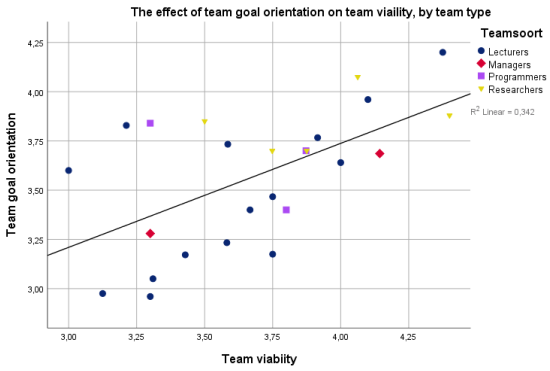
Overview of the highest VIF scores used in the models.

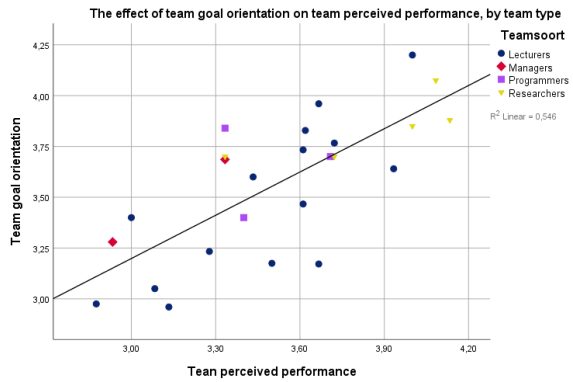
Table	Step	Highest VIF score
5	Model 2	1.850 Team Cooperation
7	Model 3	3.838 Expertise Integration

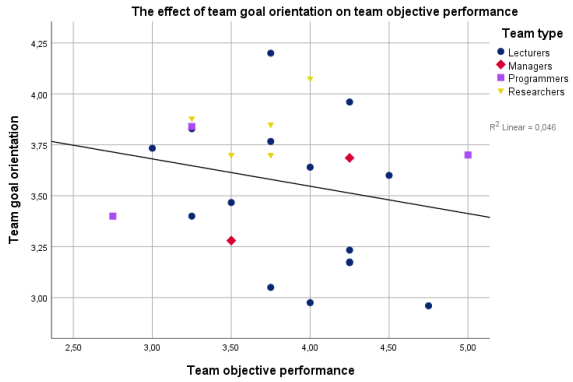
6) Scatterplots of the effect of team goal orientation on the 4 dimensions of team effectiveness by team type.











Note: N=25 teams

7) Results Bootstrapping test Preacher and Hayes to test mediation

- The relationship between team goal orientation and team effectiveness, direct and via expertise integration.

```
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Release 2.13 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3

**************************************************************************
Model = 4
    Y = TEFF_TOT
    X = GO_TOT
    M = EI_TOT

Statistical Controls:
CONTROL= TASK_INT O_TENURE T_COOP

Sample size
        144
**************************************************************************
Outcome: EI_TOT

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,8465      ,7165      ,1700    87,8170     4,0000   139,0000      ,0000

Model
             coeff         se          t          p       LLCI       ULCI
constant      ,4418      ,2294     1,9263      ,0561     -,0117      ,8953
GO_TOT        ,4417      ,0649     6,8050      ,0000      ,3133      ,5700
TASK_INT     -,0872      ,0433    -2,0156      ,0458     -,1728     -,0017
O_TENURE     -,0087      ,0033    -2,6461      ,0091     -,0151     -,0022
T_COOP        ,6128      ,0624     9,8275      ,0000      ,4895      ,7361
**************************************************************************
Outcome: TEFF_TOT

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,8051      ,6481      ,0600    50,8421     5,0000   138,0000      ,0000

Model
             coeff         se          t          p       LLCI       ULCI
constant     1,7194      ,1381    12,4475      ,0000     1,4463     1,9925
EI_TOT        ,1924      ,0504     3,8170      ,0002      ,0927      ,2921
GO_TOT        ,1358      ,0445     3,0492      ,0028      ,0477      ,2239
TASK_INT      ,0476      ,0261     1,8251      ,0702     -,0040      ,0992
O_TENURE     -,0015      ,0020     -,7765      ,4388     -,0055      ,0024
T_COOP        ,1348      ,0482     2,7937      ,0060      ,0394      ,2302

****************** DIRECT AND INDIRECT EFFECTS ************************

Direct effect of X on Y
     Effect         SE          t          p       LLCI       ULCI
      ,1358      ,0445     3,0492      ,0028      ,0477      ,2239

Indirect effect of X on Y
           Effect    Boot SE   BootLLCI   BootULCI
EI_TOT      ,0850      ,0283      ,0384      ,1522

****************** ANALYSIS NOTES AND WARNINGS ************************
Number of bootstrap samples for bias corrected bootstrap confidence intervals:
     1000

Level of confidence for all confidence intervals in output:
    95,00

------ END MATRIX -----
```

- The relationship between team learning goal orientation and team effectiveness, direct and via expertise integration.

```
Model = 4
    Y = TEFF_TOT
    X = TLGO_TOT
    M = EI_TOT

Statistical Controls:
CONTROL= TASK_INT O_TENURE T_COOP

Sample size
        144

**************************************************************************
Outcome: EI_TOT

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,8575      ,7354      ,1587    96,5590     4,0000   139,0000      ,0000

Model
              coeff         se          t          p       LLCI       ULCI
constant      ,5273      ,2149     2,4535      ,0154      ,1024      ,9523
TLGO_TOT      ,4164      ,0540     7,7153      ,0000      ,3097      ,5231
TASK_INT     -,0762      ,0415    -1,8345      ,0687     -,1582      ,0059
O_TENURE     -,0082      ,0032    -2,6006      ,0103     -,0145     -,0020
T_COOP        ,5716      ,0616     9,2733      ,0000      ,4498      ,6935

**************************************************************************
Outcome: TEFF_TOT

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,8084      ,6535      ,0591    52,0634     5,0000   138,0000      ,0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     1,7589      ,1340    13,1244      ,0000     1,4939     2,0238
EI_TOT        ,1727      ,0518     3,3362      ,0011      ,0704      ,2751
TLGO_TOT      ,1340      ,0394     3,4045      ,0009      ,0562      ,2119
TASK_INT      ,0497      ,0256     1,9393      ,0545     -,0010      ,1004
O_TENURE     -,0016      ,0020     -,8032      ,4232     -,0055      ,0023
T_COOP        ,1347      ,0479     2,8136      ,0056      ,0400      ,2294

****************** DIRECT AND INDIRECT EFFECTS ************************

Direct effect of X on Y
     Effect         SE          t          p       LLCI       ULCI
      ,1340      ,0394     3,4045      ,0009      ,0562      ,2119

Indirect effect of X on Y
           Effect    Boot SE   BootLLCI   BootULCI
EI_TOT      ,0719      ,0250      ,0301      ,1303

****************** ANALYSIS NOTES AND WARNINGS ************************

Number of bootstrap samples for bias corrected bootstrap confidence intervals:
     1000

Level of confidence for all confidence intervals in output:
    95,00

------ END MATRIX -----
```

- The relationship between team performance prove goal orientation and team effectiveness, direct and via expertise integration.

```
Model = 4
    Y = TEFF_TOT
    X = PAGO_TOT
    M = EI_TOT

Statistical Controls:
CONTROL= TASK_INT O_TENURE T_COOP

Sample size
        144

**************************************************************************
Outcome: EI_TOT

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,7976      ,6362      ,2181    60,7688     4,0000   139,0000      ,0000

Model
              coeff         se          t          p       LLCI       ULCI
constant      ,8802      ,2506     3,5132      ,0006      ,3848     1,3756
PAGO_TOT      ,1121      ,0482     2,3269      ,0214      ,0169      ,2074
TASK_INT     -,0532      ,0488    -1,0906      ,2773     -,1497      ,0433
O_TENURE     -,0101      ,0037    -2,7390      ,0070     -,0174     -,0028
T_COOP        ,7909      ,0629    12,5772      ,0000      ,6666      ,9152

**************************************************************************
Outcome: TEFF_TOT

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,7922      ,6276      ,0635    46,5212     5,0000   138,0000      ,0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     1,7921      ,1411    12,6991      ,0000     1,5130     2,0711
EI_TOT        ,2596      ,0458     5,6707      ,0000      ,1691      ,3502
PAGO_TOT      ,0288      ,0265     1,0881      ,2785     -,0236      ,0813
TASK_INT      ,0614      ,0265     2,3207      ,0218      ,0091      ,1137
O_TENURE     -,0013      ,0020     -,6419      ,5220     -,0054      ,0027
T_COOP        ,1359      ,0496     2,7377      ,0070      ,0377      ,2340

****************** DIRECT AND INDIRECT EFFECTS ************************

Direct effect of X on Y
     Effect         SE          t          p       LLCI       ULCI
      ,0288      ,0265     1,0881      ,2785     -,0236      ,0813

Indirect effect of X on Y
           Effect    Boot SE   BootLLCI   BootULCI
EI_TOT      ,0291      ,0144      ,0063      ,0626

****************** ANALYSIS NOTES AND WARNINGS ************************

Number of bootstrap samples for bias corrected bootstrap confidence intervals:
     1000

Level of confidence for all confidence intervals in output:
    95,00

------ END MATRIX -----
```

- The relationship between team learning goal orientation and team viability, direct and via expertise integration.

```
Model = 4
    Y = T_VIAB
    X = TLGO_TOT
    M = EI_TOT

Statistical Controls:
CONTROL= TASK_INT O_TENURE T_COOP

Sample size
        144

**************************************************************************
Outcome: EI_TOT

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,8575      ,7354      ,1587    96,5590     4,0000   139,0000      ,0000

Model
              coeff         se          t          p       LLCI       ULCI
constant      ,5273      ,2149     2,4535      ,0154      ,1024      ,9523
TLGO_TOT      ,4164      ,0540     7,7153      ,0000      ,3097      ,5231
TASK_INT     -,0762      ,0415    -1,8345      ,0687     -,1582      ,0059
O_TENURE     -,0082      ,0032    -2,6006      ,0103     -,0145     -,0020
T_COOP        ,5716      ,0616     9,2733      ,0000      ,4498      ,6935

**************************************************************************
Outcome: T_VIAB

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,2973      ,0884      ,1205     2,6769     5,0000   138,0000      ,0242

Model
              coeff         se          t          p       LLCI       ULCI
constant     2,4453      ,1914    12,7789      ,0000     2,0669     2,8236
EI_TOT        ,0981      ,0739     1,3267      ,1868     -,0481      ,2443
TLGO_TOT      ,0028      ,0562      ,0502      ,9600     -,1083      ,1140
TASK_INT      ,0540      ,0366     1,4743      ,1427     -,0184      ,1264
O_TENURE      ,0015      ,0028      ,5461      ,5859     -,0040      ,0071
T_COOP        ,0036      ,0684      ,0523      ,9584     -,1316      ,1387

****************** DIRECT AND INDIRECT EFFECTS ************************

Direct effect of X on Y
     Effect         SE          t          p       LLCI       ULCI
      ,0028      ,0562      ,0502      ,9600     -,1083      ,1140

Indirect effect of X on Y
          Effect    Boot SE   BootLLCI   BootULCI
EI_TOT      ,0408      ,0312     -,0098      ,1207

****************** ANALYSIS NOTES AND WARNINGS ************************

Number of bootstrap samples for bias corrected bootstrap confidence intervals:
     1000

Level of confidence for all confidence intervals in output:
    95,00

------ END MATRIX -----
```

- The relationship between team learning goal orientation and team satisfaction, direct and via expertise integration.

```
Model = 4
    Y = T_SATISF
    X = TLGO_TOT
    M = EI_TOT

Statistical Controls:
CONTROL= TASK_INT O_TENURE T_COOP

Sample size
        144

**************************************************************************
Outcome: EI_TOT

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,8575      ,7354      ,1587    96,5590     4,0000   139,0000      ,0000

Model
              coeff         se          t          p       LLCI       ULCI
constant      ,5273      ,2149     2,4535      ,0154      ,1024      ,9523
TLGO_TOT      ,4164      ,0540     7,7153      ,0000      ,3097      ,5231
TASK_INT     -,0762      ,0415    -1,8345      ,0687     -,1582      ,0059
O_TENURE     -,0082      ,0032    -2,6006      ,0103     -,0145     -,0020
T_COOP        ,5716      ,0616     9,2733      ,0000      ,4498      ,6935

**************************************************************************
Outcome: T_SATISF

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,8302      ,6893      ,1640    61,2189     5,0000   138,0000      ,0000

Model
              coeff         se          t          p       LLCI       ULCI
constant      ,6668      ,2232     2,9874      ,0033      ,2254     1,1081
EI_TOT        ,2724      ,0862     3,1587      ,0019      ,1019      ,4429
TLGO_TOT      ,1732      ,0656     2,6408      ,0092      ,0435      ,3028
TASK_INT      ,1418      ,0427     3,3210      ,0011      ,0574      ,2263
O_TENURE     -,0020      ,0033     -,6109      ,5423     -,0085      ,0045
T_COOP        ,3152      ,0797     3,9529      ,0001      ,1575      ,4728

****************** DIRECT AND INDIRECT EFFECTS ************************

Direct effect of X on Y
     Effect         SE          t          p       LLCI       ULCI
      ,1732      ,0656     2,6408      ,0092      ,0435      ,3028

Indirect effect of X on Y
          Effect    Boot SE   BootLLCI   BootULCI
EI_TOT     ,1134      ,0397      ,0420      ,2020

****************** ANALYSIS NOTES AND WARNINGS ************************

Number of bootstrap samples for bias corrected bootstrap confidence intervals:
     1000

Level of confidence for all confidence intervals in output:
    95,00

------ END MATRIX -----
```

- The relationship between team learning goal orientation and team perceived performance, direct and via expertise integration.

```
Model = 4
    Y = T_PPERF
    X = TLGO_TOT
    M = EI_TOT

Statistical Controls:
CONTROL= TASK_INT O_TENURE T_COOP

Sample size
        144

**************************************************************************
Outcome: EI_TOT

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,8575      ,7354      ,1587    96,5590     4,0000   139,0000      ,0000

Model
              coeff         se          t          p       LLCI       ULCI
constant      ,5273      ,2149     2,4535      ,0154      ,1024      ,9523
TLGO_TOT      ,4164      ,0540     7,7153      ,0000      ,3097      ,5231
TASK_INT     -,0762      ,0415    -1,8345      ,0687     -,1582      ,0059
O_TENURE     -,0082      ,0032    -2,6006      ,0103     -,0145     -,0020
T_COOP        ,5716      ,0616     9,2733      ,0000      ,4498      ,6935

**************************************************************************
Outcome: T_PPERF

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,7201      ,5185      ,2473    29,7190     5,0000   138,0000      ,0000

Model
              coeff         se          t          p       LLCI       ULCI
constant      ,4887      ,2741     1,7830      ,0768     -,0532     1,0307
EI_TOT        ,3639      ,1059     3,4363      ,0008      ,1545      ,5733
TLGO_TOT      ,1746      ,0805     2,1675      ,0319      ,0153      ,3338
TASK_INT      ,0502      ,0525      ,9568      ,3404     -,0535      ,1539
O_TENURE      ,0041      ,0040     1,0236      ,3078     -,0039      ,0121
T_COOP        ,1652      ,0979     1,6871      ,0938     -,0284      ,3588

****************** DIRECT AND INDIRECT EFFECTS ************************

Direct effect of X on Y
     Effect         SE          t          p       LLCI       ULCI
      ,1746      ,0805     2,1675      ,0319      ,0153      ,3338

Indirect effect of X on Y
          Effect    Boot SE   BootLLCI   BootULCI
EI_TOT     ,1515      ,0523      ,0589      ,2656

****************** ANALYSIS NOTES AND WARNINGS ************************

Number of bootstrap samples for bias corrected bootstrap confidence intervals:
     1000

Level of confidence for all confidence intervals in output:
    95,00

------ END MATRIX -----
```

- The relationship between team learning goal orientation and team objective performance, direct and via expertise integration.

```
Model = 4
    Y = T_OPERF
    X = TLGO_TOT
    M = EI_TOT

Statistical Controls:
CONTROL= TASK_INT O_TENURE T_COOP

Sample size
        144

**************************************************************************
Outcome: EI_TOT

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,8575      ,7354      ,1587    96,5590     4,0000   139,0000      ,0000

Model
              coeff         se          t          p       LLCI       ULCI
constant      ,5273      ,2149     2,4535      ,0154      ,1024      ,9523
TLGO_TOT      ,4164      ,0540     7,7153      ,0000      ,3097      ,5231
TASK_INT     -,0762      ,0415    -1,8345      ,0687     -,1582      ,0059
O_TENURE     -,0082      ,0032    -2,6006      ,0103     -,0145     -,0020
T_COOP        ,5716      ,0616     9,2733      ,0000      ,4498      ,6935

**************************************************************************
Outcome: T_OPERF

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      ,3467      ,1202      ,2475     3,7713     5,0000   138,0000      ,0031

Model
              coeff         se          t          p       LLCI       ULCI
constant     3,4347      ,2742    12,5265      ,0000     2,8925     3,9768
EI_TOT       -,0434      ,1059     -,4099      ,6825     -,2529      ,1661
TLGO_TOT      ,1857      ,0806     2,3046      ,0227      ,0264      ,3449
TASK_INT     -,0471      ,0525     -,8971      ,3712     -,1508      ,0567
O_TENURE     -,0100      ,0040    -2,4774      ,0144     -,0180     -,0020
T_COOP        ,0549      ,0980      ,5601      ,5763     -,1388      ,2486

****************** DIRECT AND INDIRECT EFFECTS ************************

Direct effect of X on Y
     Effect         SE          t          p       LLCI       ULCI
      ,1857      ,0806     2,3046      ,0227      ,0264      ,3449

Indirect effect of X on Y
           Effect    Boot SE   BootLLCI   BootULCI
EI_TOT     -,0181      ,0444     -,1103      ,0626

****************** ANALYSIS NOTES AND WARNINGS ************************

Number of bootstrap samples for bias corrected bootstrap confidence intervals:
     1000

Level of confidence for all confidence intervals in output:
    95,00

------ END MATRIX -----
```