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ANTECEDENTS AND CONSEQUENCES OF SHARED MENTAL MODEL FOR SERVICE TEAMS

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I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

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ABSTRACT

ANTECEDENTS AND CONSEQUENCES OF SHARED MENTAL MODEL FOR SERVICE TEAMS

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The aim of the present study was to examine personality traits of Agreeableness, Extraversion, Conscientiousness, and their facets (i.e., Trust, Cooperation, Warmth, and Achievement Striving) as antecedents and team performance, viability and potency as consequences of shared mental model (SMM). In the present study, SMM was operationalized both implicitly (i.e., relatedness ratings) and explicitly (i.e., questionnaire). In this regard, the study hypotheses were analyzed separately for two implicit SMM measures (i.e. teamwork SMM and taskwork SMM) and one explicit SMM measure. A total of 27 sale teams (with 128 team members) in a technology retailer chain store constituted the sample of the study. Concerning antecedents of SMM, the study results did not support the hypotheses regarding relationship between SMM and team mean Trust, Extraversion, Warmth, and Consciousness. However, the study results showed that whereas team mean levels of Agreeableness, Cooperation, and Achievement Striving were positively related to SMM, team variance in Trust and Warmth were negatively related to SMM. Besides, team mean Extraversion was found to have a quadratic relationship with SMM. Concerning consequences of SMM, while SMM exhibited positive relationships with both Team Viability and Team Potency, surprisingly it exhibited an unexpected negative relationship with Team Performance. The study findings are discussed along with the limitations, potential contributions, and implications.

Keywords: Shared Mental Models, Personality, Team Performance, Team Viability, Team Potency.

ÖZ

SERVİS TAKIMLARI İÇİN ORTAK ZİHİNSEL MODELLERİN ÖNCÜLERİ VE SONUÇLARI

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Mevcut çalışmanın amacı ortak zihinsel modellerin (OZM) öncüleri olarak Uyumluluk, Dışadönüklük ve Sorumluluk Bilinci kişilik faktörleri ile onların alt boyutlarını (Güven, İşbirliği, Yakınlık ve Başarı Kazanma Güdüsü) ve sonuçları olarak da Takım Performansı, Sürdürülebilirliğini ve Potansiyelini araştırmaktır. Mevcut çalışmada, OZM örtük (ilişki değerlendirmesi) ve açık (öz beyan/ölçek) olmak üzere iki farklı yöntem kullanılarak operasyonel olarak tanımlanmıştır. Bu bağlamda, çalışmanın hipotezleri iki örtük OZM ölçümü ve bir açık OZM ölçümü için ayrı ayrı test edilmiştir. Mevcut araştırmaya 128 takım üyesinden oluşan 27 takım katılmıştır. OZM ile takım ortalama Güven, Dışadönüklük, Yakınlık ve Sorumluluk Bilinci arasındaki ilişkilere yönelik hipotezler desteklenmezken, OZM ile Uyumluluk, İşbirliği ve Başarı Kazanma Güdüsü arasında hipotez edilen pozitif ilişkiler desteklenmiştir. Ayrıca, mevcut çalışma bulguları, güven ve yakınlık faktörlerinin takımdaki varyanslarının OZM ile negatif yönde ilişkili olduğunu göstermektedir. Bir diğer taraftan, beklenenin aksine, Dışadönüklük faktörü ve OZM arasında kuadratik bir ilişki bulunmuştur. OZM'nin sonuçları ile ilgili olarak OZM takım sürdürebilirliği ve potansiyeli ile pozitif olarak ilişkili bulunurken, takım performansı ile beklenmedik bir şekilde negatif yönde ilişkili bulunmuştur. Çalışmanın bulguları, sınırlılıkları, katkıları ve doğurguları ile birlikte tartışılmıştır.

Anahtar Kelimeler: Ortak Zihinsel Model, Kişilik, Takım Performansı, Takım Sürdürülebilirliği, Takım Potansiyeli.

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CHAPTER 1

INTRODUCTION

1. 1 Overview

Technological advances have increased complexity of many work tasks, which led to difficulties in completion of tasks independently (Mathieu, Heffner, Goodwin, & Cannon-Bowers, 2000). As a response to technological advances and uncertainty of work environment, a team based approach was implemented in order to improve effectiveness (Guzzo & Dickson, 1996; Mathieu et al., 2000). In team literature, there has been a shift from question "what predicts team effectiveness" to "why some teams are more effective" than the other teams (Ilgen, Hollenbeck, Johnson & Jundt, 2005). Shared cognition construct seems to contribute to our understanding of the differences between ineffective and effective teams (Cannon-Bowers & Salas, 2001). According to Salas and Cannon-Bowers (2001), shared cognition construct covers the view that "effective team members hold knowledge that is either compatible, complementary, and/or overlapping with teammates" (p. 87).

As one approach to shared cognition, shared mental model (SMM), has recently gained much research interest (Mathiue, Rapp, Maynard, & Mangos, 2010). SMM construct that derived from mental model construct in cognitive psychology has been regarded as one of cognitive architecture of teams (DeChurch & Mesner-Magnus, 2010). At individual level, mental models are conceptual structures for describing, explaining and predicting a system with which people interact (Rouse & Morris, 1986). As a team level phenomenon, SMM was defined as "knowledge structures held by members of a team that enable them to form accurate explanations and expectations for the task, and in turn, to coordinate their actions and adapt their behavior to the demands of the task and other team members" (Cannon-Bowers, Salas & Converse, 1993, p. 228). Theoretical and empirical works suggest the significance of "being on the same page" for team members in order to carry out interaction necessary for obtaining the desired team outputs (Fisher, Bell, Dierdorff, & Belohlav, 2012). Although a number of studies has been conducted on the role of

SMM on team effectiveness (e.g., Lim & Klein, 2006; Marks, Sabella, Burke, & Zaccaro, 2002; Marks, Zaccaro & Mathieu, 2000; Mathieu et al. 2000; Rentsch & Klimoski, 2001; Smith-Jentsch, Mathieu, & Kraiger, 2005), there still remains questions to be researched about the measurement, outcomes, and antecedents of SMM as well as the generalizability of the reported findings. The present study is an attempt to answer some of these questions. More specifically, four aspects of SMM are in the focus of the present study.

First, there have been varieties of approaches to measure SMM such as repertory grids, verbal protocols, and card sorting (Smith-Jentsch, Campbell, Milanovich & Reynolds, 2001); pathfinder analysis, multidimensional scaling analysis and paired comparison method (Rentsch & Klimoski, 2001); and interactively elicited cognitive mapping, concept mapping, and network analysis (Mathieu et al., 2000). However, in their meta analysis DeChurch and Mesner-Magnus (2010) showed that different measurement methods (i.e., relatedness ratings, traditional rating format) of SMM differentially predict team processes and performance. In addition, the work of Resick and colleagues (2010) on convergent, discriminant, and predictive validity of the three SMM measurement metrics (i.e., structural networks, priority rankings, and importance ratings) indicated that there was small overlap among these metrics. Aforementioned findings on SMM and its measurement suggest operationalizing SMM with different methods to ensure capturing underlying construct. Accordingly, in the present study, both implicit (relatedness ratings) and explicit (self-report questionnaire format) methods of measuring SMM were used.

Second, although the previous studies reported significant relationships of SMM with some team output measures (e.g., performance indices) and team processes (e.g. coordination, communication, back up behavior), little is known about the role of SMM in promoting team affective outputs like team viability and group potency. Hence, the present study examines the relationship between shared mental model and team outputs of performance, team viability, and group potency.

Third, relatively less attention has been paid to the relationship between team composition factors and SMM in the shared cognition research. Cognitive ability

(Edward, Day, Arthur Jr. & Bell, 2006; Yang, Kang, & Mason, 2008) and personality (Resick, Dickson, Mitchelson, Allison, & Clark, 2010) are among the characteristics studied as antecedents of team mental model development. As personality factors, Agreeableness (Yang et al., 2008; Resick et al., 2010) and Conscientiousness (Resick et al., 2010) were hypothesized to be positively related with mental model development, and the hypothesized relationship of Agreeableness was supported. In the present study, in line with the suggestions of LePine and Van Dyne (2001) on the need for facet level analysis in personality research, it was expected that Agreeableness and its facets of *Trust* and *Cooperation*, Extraversion's facet of Warmth, Conscientiousness and its facet Achievement Striving would be positively associated with both measures of SMM and Extraversion would be negatively related with both measures of SMM.

Fourth, majority of the studies on the topic have been conducted in laboratory settings. As Bradley, White, and Mennecke (2003) and Rentsch and Klimoski (2001) stated, the generalizability of such studies to real life team context is likely to be limited. Hence, the present study aims to deal with this generalizability problem by being conducted in a field setting.

To summarize, the present study aimed to examine personality as antecedents and team performance, team viability, and group potency as consequences of SMMs. Furthermore, the hypotheses were examined in a naturalistic setting instead of a controlled lab environment. Finally, the study was conducted on service teams as opposed to actions teams on which majority of SMM research have been conducted.

In the following sections, first, a brief summary of the literature on work teams is presented. Next, a review of the research findings on SMM construct is presented; specifically, the literature on the antecedents and consequences of SMM is overviewed along with a discussion of three personality traits (i.e., Agreeableness, Extraversion, Conscientiousness) as the antecedents and team performance, viability and potency as the consequences of SMM. Following this, hypotheses of the study are presented.

1.2. Concept of Work Teams

There have been various definitions and taxonomies proposed for the team construct. Along with different team definitions and team type classifications, there have been a number of theoretical models of team effectiveness that were researched in the team and group literatures. In the following two subsections, a brief summary of the literature on definitions and types of work teams, and theoretical models of team effectiveness are presented.

1.2.1. Definitions and Types of Work Teams

A team is 'a distinguishable set of two or more people who interact, dynamically, interdependently, and adaptively to achieve specified, shared, and valued objectives' (Morgan, Glickman, Woodard, Blaiwes, & Salas, 1986, p. 3). Teams are regarded as having broader capabilities for complex tasks based on enabling sharing of workload and monitoring of others member's behaviors and development expertise in subtasks (Mathieu et al., 2000). A team is comprehensively defined as:

> collection of individuals who are interdependent in their tasks, who share responsibility for outcomes, who see themselves and who are seen by others as an intact social entity embedded in one or more larger social systems (for example, business unit or the corporation), and who manage their relationships across organizational boundaries (Cohen & Bailey, p. 241).

Particularly, this definition reveals that team members are highly interdependent and perform in an environment influencing their team functioning. Ilgen and colleagues (2005) stated that in teams, there is a cycle in which team members interact with each other and the environment. These interactions lead change in teams, their members and their environment and this is more complex than simple cause and effect relationship.

Teams are brought together in many different designs and are assigned to different type of tasks (Mathieu et al., 2008). Accordingly, some researchers developed different team type taxonomies (e.g., Cohen & Bailey, 1997; Sundstrom, 1990). For example, Sundstrom and colleagues (1990) reported four broad categories of work team applications: advice and involvement teams, production/service teams,

project/development teams, and action/negotiation teams. In 1999, Sundstrom identified six types of teams: *management teams, project teams, production teams, action teams, parallel teams,* and *service teams*. Production teams are responsible for manufacturing and assembling products, and factory teams fall in this type of teams. Service teams are responsible to carry out dyadic customer transactions. Maintenance crews, food services and sale teams are examples for service teams. Third type of teams is management teams. Management teams are formed by managers who are responsible for planning and developing policies and coordinating organizational activities. As the fourth team type, project teams are formed by experts who are expected to carry out specific task in a specific time period. Research and engineering teams fall under this type of team. The fifth team type, action teams, is formed by members who repetitively encounter new occasions requiring specialization and training. Sports teams, surgery teams and military teams are examples of action teams. The final type is parallel teams. This type of teams is temporary in nature, they function outside of the organization and they are responsible for making suggestions or recommendations for the organization. Employee involvement groups and advisory committees are examples of management teams (as cited in Levi, 2011).

Compared to classification of Sundstrom (1990), Cohen and Bailey (1997) provided a narrower classification with four types of teams: work teams, parallel teams, project teams, and management teams. They asserted that their classifications corresponds to the typology of Sundstrom (1990) developed as work teams overlap with production and service teams, parallel teams with advice and involvement teams, project teams with project and development teams.

According to Cohen and Bailey (1997), work teams are permanent in nature, they produce goods or they provide services. Teams operating in manufacturing and service settings are examples of this type. Work teams operate under supervisors who decide what is to be done, by whom, and how it is done. Self managing teams fall under the work teams. These authors indicated that parallel teams with members from diverse departments and jobs operate parallel with the formal organization. They have restricted authority and they only are expected to make recommendation and suggestions to upper hierarchy in the organization. They are generally involved

in problem solving and improvement-oriented actions. Samples of parallel teams are quality improvement teams, employee involvement groups, quality circles and task forces. According to Cohen and Bailey (1997), project teams operate within time limit to carry out non-repetitive tasks that require application of knowledge, judgment, and expertise. Project teams are formed with members from different disciplines and functional divisions, which enable application of specialized expertise in the project. New product development teams are usually formed with members from marketing, engineering, and manufacturing departments/units. At the end of the project, members of such teams either go back to their functional units or go to a new project. The final team type in Cohen and Bailey's taxonomy is management teams. Management teams have authority stemming from legitimate hierarchy, and they are formed with managers of units such as research and development, manufacturing, marketing, etc. Management teams at the top have responsibility of establishing the organizational strategy and managing performance of the organization. The complexity of global business has increased the usage of top management teams (TMT).

The present study focused on the category of service teams based on Sundstrom's (1990) typology and work teams based on Cohen and Bailey's (1997) classification. Due to heterogeneity within and across team types, each type of team requires different demands and operates differently from each other (Mathieu et al., 2008). In line with, some researchers suggested that the context in team functioning and the type of team should be taken into consideration in studying SMM (e.g., Mathieu, et.al, 2010). The majority of SMM field studies have been conducted with action teams (e.g., Chou,Wang,Wang, Huang, & Cheng, 2008) in laboratory settings and recently team cognition researchers have called for studies on other team types (e.g., Mohammed et al., 2010). Accordingly, the present study examined the antecedents and outcomes of shared mental models in a naturalistic setting with service teams.

1.2.2 Theoretical Models of Team

The central role of processes in team effectiveness resulted in development of team effectiveness models in which input-process-output (I-P-O) framework have been commonly applied (Marks, Mathiue, & Zaccora, 2001). In this framework,

conditions present before team performance including member, team, and organizational characteristics are referred to as *inputs*. *Processes* refer to mechanism in which inputs are converted to outputs and represent team interaction to accomplish the task. Marks and his colleagues (2001) indicated that beyond abilities and talents of team members, the success of teams also depends on team processes used to accomplish the work. The authors described team processes as "members' interdependent acts that convert inputs to outcomes through cognitive, verbal, and behavioral activities directed toward organizing task work to achieve collective goals" (p.357). The last component of the model, *outputs* refer to products, services, and results of team performance (Mathieu et al., 2000).

Although this framework had substantial influence on empirical research, Ilgen and colleagues (2005) argued that this framework is not sufficient to capture the complex and adaptive system of teams. They provided three reasons for their argument in their review on teams in organizations. First, they argued that the classic I-P-O framework failed to capture the cycle of I-P-O as it assumed a linear path from inputs to outputs through processes. Indeed, due to feedback among these components of the framework, an output was regarded as the input of the subsequent team processes and outputs. Second, they asserted that there were reported interactions among these three components: inputs and processes, processes, and inputs. Lastly, they mentioned that the proposed mediator variables examined in the literature based on this framework were not actually processes.

A similar clarification concerning team processes was proposed by Cohen and Bailey (1997) in their heuristic model of group effectiveness. Their model moved away from the "input-process-output" framework and distinguished team processes from psychosocial traits including norms, SMM, cohesion, beliefs or emotional tone. Psychosocial traits have direct effects on outcomes and indirect effects through internal (e.g., conflict and communication with group members) and external (e.g., conflict and communication with external others) processes on outcomes, suggesting that psychosocial traits are affected by inputs and processes, and they themselves affect both processes and outputs. Regarding team processes, Marks et al. (2001) highlighted the general concern about the selection and operationalization of process variables despite the well established conceptual

meaning of team process. They asserted that although some constructs (e.g., team cohesion and collective efficacy) do not represent interaction processes, they were referred to as process variables in several studies. According to the researchers, these variables denote team member attitudes, values, cognitions, and motivations instead of interaction processes. They termed these variables as "emergent states" and defined them as "… constructs that characterize properties of the team that are typically dynamic in nature and vary as a function of team context, inputs, processes and outcomes" (p.357). They argued that psychosocial traits should be considered as emergent states instead of traits since traits are more stable than states.

Concerning deficiencies of the I-P-O framework, Ilgen and colleagues (2005) proposed an alternative term, IMOI (i.e., input-mediator-output-input) model. They reasoned addition of input at the end of the model as to reflect the cyclical causal feedback in the model and removal of hyphen as indicator of nonlinear or conditional linkage among the model components. Taken together, SMM appears to be regarded as an emergent state and mediator, not a process variable in this IMOI model.

1.3 Shared Mental Model

The idea that shared cognition is influential for team and organizational performance has been around over 20 years (Cannon-Bowers et al., 1993; Klimoski & Mohammed, 1994). On the value of shared cognition in team and organizational performance, Cannon-Bowers and Salas (2001) proposed three reasons. First, according to the authors, shared cognition has exploratory value that enables understanding of performance by clarifying how members of effective teams cooperate. Second, it was stated that shared knowledge allow members to interpret cues in similar ways, make similar decisions and take proper actions (Cooke, Salas, Cannon-Bowers, & Stout, 2000; Mohammed & Dumville, 2001). Thus, the concept of shared cognition makes the difference between ineffective and effective teams clear by showing that members of effective teams have compatible knowledge guiding their coordinated behaviors. Third, shared cognition might help practitioners in diagnosing team's problems and how to solve these problems. More specifically, practitioners may benefit from shared cognition research to gain insights concerning the elements of effective teamwork.

In the context of shared cognition, the term "shared" may take various meanings. According to Cannon-Bowers and Salas (2001), shared may mean four things: *shared or overlapping*, *similar or identical*, *compatible or complementary*, and *distributed*. Shared or overlapping refers to common knowledge base that is needed to have by two or more team members. As a typical example, in an operating room team, surgeons and nurses do not need to have identical knowledge; however, they should have a common knowledge base. In the second category, team members need to have similar/identical knowledge. Mostly, similar attitudes and beliefs fall in this category since holding similar beliefs and attitudes (e.g., toward feedback) is crucial for team development. Third meaning attributed to "shared" is complementary or compatible. According to Cannon- Bowers and Salas (2001), team members might not always have similar or identical knowledge; similar or identical knowledge may not be necessary. For some tasks, team members might have different knowledge but their knowledge need to be compatible for effective team performance. For this category, multidisciplinary teams may be given as an example. In such teams, having accurate expectations about themselves, their teammates and task are critical and these expectations might be derived from dissimilar but complementary knowledge. The last meaning, distributed, refers to the extent to which knowledge is effectively allocated among members. Unlike the other categories or meanings of "shared" in this category, team members have specialized and distributed knowledge. Thus, coordination of team members is important because task accomplishment rely on knowledge of all team members.

The most widely researched concept related to shared cognition is shared mental model (SMM) (Cannon-Bowers et al., 1993; Klimoski & Mohammed, 1994; Mathieu et al., 2000) and the associated concept *shared schema* (Rentsch & Hall, 1994). Shared team mental models was defined as "knowledge structures held by members of a team that enable them to form accurate explanations and expectations for the task, and in turn, to coordinate their actions and adapt their behavior to demands of the task and other team members" (Cannon-Bowers et al., 1993, p. 228). SMM was regarded as one of the main factors influencing team performance (Cannon & Edmondson, 2001). The SMM construct, which was derived from the mental model construct in cognitive psychology, has been regarded as one of

cognitive architecture of teams (DeChurch & Mesner-Magnus, 2010). With respect to individual, mental models are conceptual structures for describing, explaining and predicting a system with which people interact (Rouse & Morris, 1986). From the early 1990s when the SMM construct was introduced to the team effectiveness literature, it has been researched within the framework of input–process–outcome (DeChurch & Mesner-Magnus, 2010). SMM was regarded as an emergent state that show variations based on team context, inputs, processes and outcomes functions (Marks et al., 2001). In this framework, SMM appears as a mechanism that has reciprocal relationship with team processes and conveys the influence of team inputs such as composition, leadership, and training on team outputs such as performance and viability (DeChurch & Mesner-Magnus, 2010).

In the SMM literature, early theoretical studies proposed that team members have multiple mental models (Klimoski & Mohammed, 1994). Cannon-Bowers et al. (1993) specified four different types of mental models: (a) equipment-based, (b) task-based, (c) team interaction-based, and (d) team-based. First one comprises the knowledge about equipment that team members use. Second one represents the knowledge about task procedure and strategies and environmental cues. The third mental model is the knowledge about teammates' preferences, roles, and habits. The knowledge of team roles and team interaction patterns are included in the final category, team. Although this categorization has widely been accepted in the literature, some researchers examined only a single category of SMM or treated SMM as a composite measure. For instance, Marks et al. (2002) examined the effects of cross training in the development of shared team interaction mental model, a single component of SMM. In another study Marks and his colleagues (2000) examined the role of team-interaction training and leader briefings in the development of mental models as a composite entity. They found that team-interaction training and leader briefings influenced mental model development, and mental model in turn positively affected team communication processes and team performance.

Mathiue et al. (2000) asserted that aforementioned four components of SMM reflected two major domains, (a) task-related features of the situation (e.g., the

technology/equipment and job/task models) and (b) team-related aspects of the situation (e.g., the team interaction and team models). The authors argued that this classification was consistent with the two distinct track of team performance: teamwork track and a taskwork track proposed by Mclntyre and Salas (1995). Hence, Mathiue and his colleagues (2000) differentiated task and team mental model, and investigated their relationship with team processes and performance separately in a laboratory flight simulation. In their study, both task SMMs and team SMMs were found as being positively associated with team processes (strategy formation, cooperation, and communication) and performance, and the relationship between SMMs and team effectiveness was fully mediated by team processes. In a recent study, Resick and his colleagues (2010) studied team cognitive ability and personality to understand emergence of task focused mental model in laboratory setting. However, there is little empirical evidence concerning the effects of team related SMM in real world settings.

A related issue about SMM concerns whether SMM similarity or SMM accuracy is more important for team performance (Lim & Klein, 2006). Mathieu and his colleagues (2000) raised a concern related to the equivalence of high mental model convergence to accuracy/appropriateness of the shared mental model. In other words, they questioned whether convergence (similarity) was equal to quality (accuracy). Accordingly, they made a recommendation to investigate the quality of teammates' mental model. While mental model similarity refers to the degree to which team members' mental models are similar, mental model accuracy refers to the extent to which mental model of members reflects the "true state of the world" (Edwards et al., 2006, p.728). On the interaction of MM similarity and accuracy, the researchers in the SMM literature have not reached a consensus. For instance, while team mental model accuracy was found to be positively related to team performance in one study (Marks et al., 2000), it was not found to be significant in another one (Webber, Chen, Payne, Marsh, & Zaccaro, 2000). Also, in another study on team mental model quality, both taskwork mental model quality and teamwork mental model quality was not significantly associated with team processes or performance (Mathieu et al.2005). However, in Lim and Klein's (2006) study, team performance was predicted by task work mental model similarity, teamwork mental model

similarity, and team mental model accuracy. In their longitudinal study, Edwards and his colleagues (2006) reported that although there was a significant relationship between similarity and accuracy of team mental models, accuracy was a stronger predictor of team performance. In a recent study investigating relationships between MM-accuracy and MM-similarity and multiple indicators of team effectiveness, it was found that MM-accuracy was positively related to perceived coordination processes and goal accomplishment, whereas MM-similarity was positively related to team viability (Resick et al., 2010). As a highly crucial point, the authors stated that for some tasks there might be multiple correct ways or effective strategies which results in multiple accurate team mental models. Therefore, they suggested that identifying a definitive accurate mental model might not be easy. Accordingly, for such situations, they argued that teamwork mental model similarity might be more significant than its accuracy.

To summarize, the reviewed literature on types of SMM showed that different types of SMM could be related to different antecedents and concequences. Hence, rather than relying on a single type of SMM, the present study focuses on two types SMM: teamwork and taskwork SMM. Since there might be multiple effective strategies in real work settings as opposed to the lab settings, the present study focuses MM similarity instead of accuracy.

1.3.1 Measurement of SMM

Mohammed, Ferzandi, and Hamilton (2010) viewed measurement of team mental model as a complex endeavor. According to them, elicitation of mental model content and structure need more time and effort than using self-report measures due to context dependent and task specific nature of mental models. In the SMM literature, there have been a number of different approaches to the measurement of SMM, such as repertory grids, verbal protocols, and card sorting (Smith- Jentsch et al., 2001); pathfinder analysis, multidimensional scaling analysis, and paired comparison method (Rentsch & Klimoski, 2001); and interactively elicited cognitive mapping, concept mapping, and network analysis (Mathieu et al., 2000). Paired comparison and concept mapping have in general been used in laboratory settings mostly with student samples (e.g. Edwards et al., 2006; Marks et al., 2000).

Scenario-based measures, however, have been largely used in the field settings (Smith-Jentsch et al., 2005; Webber et al., 2000).

Mohammed and colleagues (2000) reviewed the following measurement techiques of team mental model: pathfinder, multidimensional scaling, interactively elicited cognitive mapping, and text-based cognitive mapping. They suggested that content and methods of elicitation (technique identifying mental model content), representation (technique uncovering data structure and relations of elements), and calculation of mental model similarity should be taken in account in the measurement of SMM. For elicitation of task related mental model content, some researchers conducted a detailed task analysis of the simulation used in the laboratory (e.g., Marks et al., 2002; Mathieu et al., 2000; Resick et al., 2010). As a commonly used method, the Pathfinder (i.e., relatedness ratings) is used to assess mental model with which participants are asked to rate the relatedness of the attributes (e.g., communication, information sharing) with one another in a matrix using a 9-point scale, ranging from -4 (negatively related) to 4 (positively related). For elicitation of team related mental model content, Mathieu et al. (2000) developed a measure that has been commonly used by subsequent researchers. This measure comprised of seven teamwork attributes obtained from previous teamwork dimensions review (e.g., Fleishman & Zaccaro, 1992; Stout, Cannon-Bowers, Salas, & Morgan, 1990). These attitudes are *amount of information*, *quality of information*, *coordination of actions*, *roles*, *liking*, *team spirit*, and *cooperation*. Participants are expected to rate the relatedness of each one of these attributes with the others (in pairs) using a 9-point scale, ranging from "-4" (negatively related) to "+4" (positively related). Relatedness ratings is not an explicit evaluation, in essence, participants evaluate relatedness of two concepts without awareness that their ratings will be compared with their teammates to generate team mental models. Hence, in the present study, the relatedness rating method was used as an implicit measure of SMM.

In measurement of SMM, questionnaires have also been used by the previous researchers (e.g., Guchait & Hamilton, 2013). In these questionnaires, participants are expected to rate their agreement in team and task related items on traditional

Likert type rating scales. The items of this type of questionnaires have usually been developed through a detailed team task analysis. The sharedness of mental model is assessed by examining the within standard deviation among responses of team members to items (Harrison & Klein, 2007), a high standard deviation suggesting low SMM similarity in teams.

Concerning the SMM measurement issue, Johnson et al. (2007) stated that the majority of studies examining the relationship between the SMM and team performance showed the proposed relationship without valid measurement addressing the relevant constructs of team-related knowledge. Accordingly, Johnson and his colleagues (2007) developed a new instrument that can be used to compute the level of team-related knowledge sharedness. The instrument includes five emergent factors of shared mental models: *general task and team knowledge, general task and communication skills, attitude toward teammates and task, team dynamics and interactions*, and *team resources and working environment*. A sample item is "My team understands how they can exchange information for doing various team tasks". Participants rate their teams on items focusing the aforementioned factors explicitly. Thus, in the present study, this questionnaire was used as an explicit measure of SMM.

Regarding differential impacts of shared mental model operationalization on team processes and team performance, in their meta analysis DeChurch and Mesner-Magnus (2010) reported that different measurement methods of SMM differently predicted team processes and performance. For instance, among used methods (i.e. concept map, card sorting tasks, consistency metric) when similarity ratings were used, strongest relationship between SMM and team processes were produced. However, no significant relationship was found in traditional scale rating format, suggesting using mental model knowledge structure representation format in order to predict team processes. Unlike team processes, to predict team performance, even traditional scale format, representing mental model content, was influential. The work of Resick et al. (2010) on convergent, discriminant, and predictive validity of the three SMM measurement metrics (i.e., structural networks, priority rankings, and importance ratings) suggested small overlap among these metrics. They provided

evidence that different metrics of SMM models represent different construct and mental models were best operationalized with structural network metrics (i.e., pathfinder).

To summarize, the reviewed literature on SMM and its measurement shows that different measurements/operationalizations of SMM could produce different results. Hence, in the present study, rather than relying on a single SMM measure, both implicit (i.e., relatedness rating) and explicit measures (i.e. questionnaire) were employed.

1.3.2 Factors Facilitating Development of SMM

Training interventions that facilitate the development of mental model similarity have received considerable research interest (e.g., Marks et al., 2000; Marks et al., 2002; Smith-Jentcsh, Campbell, Milanovich, & Reynolds, 2001). The reason underlying this interest is the fact that coming together as members of a team does not necessarily ensure the development of shared mental models among team members. Specifically, in works of Mathiue et al. (2005) and Edwards et al. (2006), no significant increase was found in similarity and accuracy of team mental models as time passed. In addition, over time, since team members interact less with each other because of increased specialization, the mental models similarity of software teams may even decrease (Levesque, Wilson, & Wholey, 2001). Taken together, these findings indicated that working together is not sufficient to develop and improve shared mental model accuracy and similarity, suggesting a need for training intervention. Accordingly, Marks et al. (2000) examined whether team interaction training and leader briefings influenced the development of mental model similarity, and they found that compared to the control group, the group receiving the training developed a more accurate and similar mental model. In a two-experiment study, Marks et al. (2002) examined the role of cross training in the development of shared mental model in a laboratory setting using a computerized flight simulator. In both experiments, the authors reached the same conclusion that cross training was influential in the development of shared team interaction models. Additionally, it was reported that trainees attending the computer-based training (CBT) had a more accurate mental model, similar to expert model, and more similar mental models to

each other. Taken together, these findings suggested that training may facilitate development of mental model by enhancing individual understanding of task and how team members perform (Smith-Jentcsh et al., 2001).

Relatively few studies have investigated the influence of team composition factors in development of mental model similarity and accuracy. In a study conducted in a naturalistic setting, Rentsch and Klimoski (2001) examined homogeneity of team demographic factors as antecedents of team mental model similarity. They found that educational and organizational level similarity, average team experience, team member recruitment, and team size were significantly associated with team member schema agreement. In addition, among navy personnel attending a computer-based training, it was found that, compared to lower ranking trainees, higher ranking trainees reported a more accurate mental model. In addition, higher ranking trainees were found to have more similar mental models than lower ranking trainees and more experienced trainees also were found to have more similar mental models than less experienced trainees (Smith-Jentsch et al., 2001). Similarly, Mathieu et al. (2000) reported that the degree of mental model similarity varied among team members. These authors pointed out that this variation might be a function of individual characteristics and team composition characteristic. Accordingly, they suggested an investigation of individual and team composition factors in relation to the development of a particular shared mental model. Hence, one of the main purposes of the present study was to examine the antecedents of MM.

1.3.3 Antecedents of SMM

Kraiger and Wenzel (1997) classified antecedents influencing development of shared mental model similarity in teams under four major levels: environmental (e.g., culture and team climate), organizational (e.g., organizational structures, structural support, reward system, and training), team (e.g., characteristic of task and interdependence), and individual factors (e.g., cognitive ability and personality). Regarding team composition, Klimoski and Mohammed (1994) pointed out that possibility of emergence of SMM model in naturalistic setting is higher when team members share common characteristics. Particularly, they noted that members of

teams with common expertise or experience incline to store and retrieve knowledge similarly.

Cognitive ability and personality are among the characteristics studied as antecedents of team mental model similarity and accuracy. In an investigation of team ability, Yang, Kang, and Mason (2008) pointed out that dyad teams comprising partners with high mental ability had more accurate mental models and these teams had higher team performance. Moreover, results of a study showed that among software development teams, SMM was positively related to team members' cognitive capabilities and the effect of cognitive capability and the personality factor of agreeableness on team effectiveness were mediated by SMM. Team general mental ability was found to be more strongly related to the team mental model accuracy than to mental model similarity, suggesting that team ability was a significant predictor of the accuracy and to some extent team mental model similarity (Edward et al., 2006). Upon these findings, since the focus of Edward et al's was examining only taskwork mental model, the authors have discussed that the comparative validity of similarity and accuracy might depend on whether taskwork mental model rather than teamwork mental model is being investigated.

The work of Resick et al. (2010) studied the nomological network of task-focused mental model in laboratory setting by using a simulated search and capture task. In their study, firstly they replicated and supported the findings of Edward et al. (2006). Mean level cognitive ability was positively related to both mental model similarity and accuracy. Moreover, they examined the role of personality factors (agreeableness and conscientiousness) in the development of mental model similarity and accuracy. In line with expectations, team agreeableness mean level was found to be related to mental model similarity however the effect of conscientiousness was not significant. Different from the previous studies conducted in lab settings on team training, the training protocol lasted considerably longer in this study (about two weeks). Nevertheless, according to the researchers, external validity of their findings was still restricted because the life span of ad hoc teams who are brought together for one assignment for a limited time was really short.

To summarize, aforementioned findings highlight that there is a need to examine the role of team personality composition in SMM development in real life teams that have a long life span. Hence, in the present study, I expected team personality composition to be related with the SMM similarity of service teams. In the following section, a brief literature review on personality and team personality composition is presented.

1.3.3.1 Team Personality

While the literature underlined the importance of cognitive ability as the best predictor of individual job performance (e.g., Schmidt & Hunter, 1998), research has shown that personality as a non-cognitive measure, explained variance beyond that explained by more traditional job-related skills and cognitive ability measures alone and also this finding was reported for both individual and the team level analyses (Neuman & Wright, 1999).

There seems to be an overall consensus concerning the validity, soundness, and criticality of the Big Five Model of personality (Costa & McCrae, 1992; Goldberg, 1990). Five basic dimensions of this framework are Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience. Across different cultures, measurement and rating sources (e.g., self report, peer report), the Big Five personality model received consistent empirical support (McCrae & John, 1992). The five-factor model has been investigated in relation with several organizational outcome variables. Particularly, the relationship between personality traits and job performance were researched in a number of studies (e.g., Barrick & Mount, 1991; Lepine & Van Dayne, 2001). Specific personality traits were found as related to improved team processes and team performance (Van Vianen, & De Dreu ,2001) and were considered as important sources of performance motivation (Judge & Ilies, 2002). Barrick and Mount's meta-analysis (1991) examining the big five factors' predictive ability in relation to three job performance criteria (i.e., job proficiency, training proficiency, and personnel data) revealed that conscientiousness had relationship with all types of criteria across all job categories. Among other personality dimensions, the effect sizes of prediction varied for different categories of job and performance criteria.

To my knowledge, relatively few studies examined factors facilitating the emergence of team mental modes (e.g., Fisher et al., 2012; Resick et al., 2010; Yang et al., 2006), suggesting more research on the role of team personality composition on SMM development. In the following section, relevant literature on the personality factors/facets hypothesized to be associated with SMM is briefly reviewed, together with these studies.

1.2.3.1.1 Agreeableness

Agreeableness, inherently interpersonal in nature (McCrea & Costa, 1989), was described by adjectives of courteous, flexible, trusting, good-natured, cooperative, forgiving, soft-hearted, and tolerant (Barrick & Mount, 1991). Individuals high on agreeableness factor are considerate, honest, helpful, warm and supportive, whereas those low on this factor are uncaring, intolerant, unsympathetic, and critical. In team settings, agreeable members tend to be helpful, friendly, warm, trusting, and tolerant. The essence of agreeableness is cooperation and agreeable members work well with others (Mount et al., 1998). For interpersonal settings like teamwork, it is argued that agreeableness might be the best predictor of performance (Mount et al., 1998; Neumann & Wright, 1999). In Mount et al.'s meta analysis, agreeableness displayed the strongest correlation with team performance, especially for jobs requiring teamwork than those requiring dyadic service interaction. It seems natural for agreeable people to engage in teamwork tasks involving cooperation and requiring interpersonal interactions (LePine & Van Dyne, 2001).

Among facets of Agreeableness, trust and cooperation were regarded as most relevant to team interaction (Driskell et al., 2006). LePine and Van Dyne (2001) found that individuals who are high in facets of trust, straightforwardness, and altruism showed more cooperative behavior. While people who are inherently trustful believe that others are honest and well-intentioned, those who are not trustful suspect motives and intentions of other people. Trust enables cooperation, helping behavior, task commitment, and spending effort for task accomplishment (Dirks, 1999).

Regarding the role of Agreeableness on SMM development, a field study by Yang et al. (2006) showed that agreeableness increased the development of shared mental model by enabling coordination. In Yang et al.'s study, shared mental model was a composite of both task- and team-related shared mental model. In another study, Resick et al. (2010) specifically examined the relationship between personality factors of agreeableness team task focused mental model similarity and accuracy. A positive relationship between team-mean-level agreeableness and team focused mental model similarity was reported in the study.

Resick and his colleagues (2010) pointed out that agreeable individuals are more likely to be open to different perspectives or opinions his/her teammates have, whereas less agreeable individual are more likely to show rigidity in their ideas about goal accomplishment and hence are less likely to comply with teammates. In line with this argument, Driskell and his colleagues (2006) asserted that the cooperative tendencies of highly agreeable individuals enable them to realize their teammates' qualifications and to endeavor to have a shared orientation about task accomplishment and interpretation of team's internal and external environment.

LePine and Van Dyne (2001) emphasized the importance of studying personality at the facet level. Consistently, Fisher and colleagues (2012) extended the work of Resick et al. (2010) and examined agreeableness facets of trust and cooperation as deep level antecedents of team-focused team mental model (TMM) similarity. While the expected positive relationship between cooperation and team-focused TMM similarity was found, surprisingly, trust exhibited a negative relationship with team-focused TMM similarity in a student sample performing a business simulation. Despite this unexpected result regarding trust, team mean trust is still expected to be highly influential in real teams with longer experience than teams with students coming together for one course.

Taken together, in the present study, based on their interpersonal oriented nature and role in facilitating interpersonal interaction, broad personality factor of Agreeableness and its facets of Cooperation and Trust were expected to be related to development of SMM similarity.

1.2.3.1.2 Extraversion

As one of the commonly researched traits in many personality models, Extraversion includes facets of *warmth*, *gregariousness*, *assertiveness*, *activity*, *excitement-seeking* and *positive emotions* (Costa & McCrea, 1992). Extraverts tend to be sociable, enthusiastic, energetic, and optimistic and they are motivated to work with others (Barrick et al., 1998). Extraversion trait was regarded as a combination of dominance/assertiveness and sociability/affiliation (Judge & Bono, 2000; Lucas, Diener, Suh, Shao, & Grob, 2000).

There have been several studies linking extraversion to affective outcomes and team processes (e.g., Barrick et al, 1998; Van Vianen and De Dreu, 2001). Extraversion appeared to have significant relationships with team processes such as cohesion, intra-group conflict, open communication, and workload sharing (Barrick et al., 1998). Compared to less extraverted individuals, highly extraverted individuals exhibited favorable approach to teamwork; they showed high confidence in their ability to work in self-managed work groups. Though team composition in terms of extraversion impact team processes positively, Barry and Stewart (1997) found that teams with too many extraverts have no followers to carry out the complementary roles. In their study they demonstrated that there was a curvilinear relationship between number of extraverted members and team effectiveness. Based on this finding, Barrick et al. (1998) suggested that variance of extraversion among the team members is critical to fill both leading and compensatory roles.

LePine and Van Dyne's (2001) study on the relationship between facets of extraversion and cooperative behavior indicated that only the Extraversion facets of warmth and activity were found to be related to cooperative behavior. Other facets (i.e., gregariousness, assertiveness, excitement seeking and positive emotions) were not related to cooperative behavior. Accordingly, due to the differential relationship exhibited by its facets and its curvilinear relationship with team effectiveness, team composition in terms of Extraversion is expected to be negatively related with SMM in teams. On the other hand, its facets warmth, referred to as personal interest in and friendliness towards others, was expected to be positively related to SMM among team members.

1.2.3.1.3 Conscientiousness

The trait of conscientiousness includes both dependability and achievement aspects (Costa & McCrae, 1992). Related to the dependability component, highly conscientious people are dependable, thorough, responsible, organized and planful (Barrick & Mount, 1991). In addition, related with achievement aspect of the trait, conscientious individuals are hardworking, achievement oriented and persevering (Barrick & Mount, 1991). Moon (2001) argued that dependability aspect could be seen as the other-centered aspect of the broad trait while achievement aspect could be regarded as the self-centered aspect. Accordingly, Lepine and Van Dyne (2001) suggest that highly conscientious people are more likely to cooperate with others when the work is contingent on interdependence and gentle interpersonal relationships. They studied the relationship between conscientious and cooperative behavior both at the factor and facet levels. At the factor level, they found a positive relationship between conscientiousness and cooperative behavior: However, this relationship was supported only for facets of competence, achievement striving and self-discipline, which reflect motivational aspects of conscientiousness. The authors noted that cooperation was not higher for people who carry out their job in an orderly, methodical and deliberate fashion which reflects the dependability nature of conscientiousness. In the work of Resick et al. (2010), the expected positive relationship between team mean-level conscientiousness and taskfocused mental model accuracy was not supported.

Given the aforementioned findings, based on motivational aspect of conscientiousness, teams with highly conscientious members were expected to have more SMM. At the facet level, as achievement facet of the broad factor was associated with more cooperative behavior, team mean level achievement striving was expected to be positively related with shared mental model similarity.

1.3.3.1.4 Team Composition Methods

Common methods of combining individual personality scores to team level constructs are using minimum, mean, maximum or variance score of team member responses. Barrick and his colleagues (1998) demonstrated that scores derived from

these methods were moderately correlated, meaning that each method represented unique information about the composition variable.

Bell (2007) also stated that some composition variables might be better represented in team level with configural model such as using the minimum, maximum and the team variance (heterogeneity) on the variable. Accordingly, the work of Barrick and his colleagues (1998) showed that different configural methods of big five personality traits were influential in prediction of the outcomes (e.g., social cohesion, team performance). For instance, team performance was associated with mean and minimum configuration of agreeableness, mean configuration of emotional stability, and minimum configuration of extraversion, social cohesion were associate with variance and maximum configuration of agreeableness and minimum and maximum configuration of extraversion.

Given aforementioned findings, selection of appropriate configural method in team composition operationalization is critical. In the present study, the minimum and maximum configural models were used in order to operationalize team personality composition.

1.3.4 Consequences of SMM

The relationships of shared mental model similarity and mental model accuracy with improved team performance and processes (e.g., communication, coordination and back up behaviors) were supported by several laboratory studies (e.g., Edward et al., 2006: Lim & Klein, 2006; Marks et al., 2002; Marks et al., 2000; Mathieu et al., 2000; Rentsch & Klimoski, 2001; Resick et al., 2010; Smith-Jentsch et al., 2005). Andres (2012) reported that timely and accurate SMM development enabled increase in productivity and team process satisfaction. In a Turkish student sample, Johnson, Top and Yukselturk (2012) studied the change in SMM and team performance through four time periods and impact of team SMM on team performance and students' course satisfaction. With respect to SMM sub factors, study findings showed that team SMM showed slight change over time interval and course satisfaction was explained by different SMM components in each time period. With respect to components of SMM, in the first time period, course satisfaction was

explained by the team and task knowledge component, in the second period, by working resources and environment component, in the third and the last period, by attitude component. Moreover, performance was explained by the attitude component through all time periods except for the third time period.

Based on the findings provided by Marks et al. (2002) and Mathieu et al. (2000), it appears that SMM improve team members coordination, which in turn result in higher team performance. In addition to team performance, shared mental model similarity might also affect some other team effectiveness components. In particular, similarity of mental models among team members is likely to influence team viability, in other words, members of teams with a more shared mental model will be highly willing to continue working together. Moreover, though researchers seemed to have reached a consensus concerning the role of shared mental model in team coordination, additional outcome variables and team process variables or emergent states should/could also be researched. Accordingly, in the present study SMM similarity was expected to be positively related to and *team performance*, *team viability,* and *team potency*.

1.3.4.1 Performance

In the laboratory investigation of task focused mental model similarity and accuracy with goal accomplishment as indicator of performance, Resick et al. (2010) found that while task-focused accuracy was positively related with goal accomplishment, task-focused mental model similarity was not. While some researchers (e.g., Marks et al., 2000) found mental model similarity as highly correlated with team performance, other researchers found mental model accuracy as a stronger predictor of team performance (e.g., Resick et al, 2010). In a field study of 71 action teams, Lim and Klein (2006) found that both teamwork and taskwork mental model similarity were significant predictors of team performance. Additionally, the study of 13 student groups working research projects yielded that there was positive relationship between mental model similarity among project team members and performance in groups. That is, teams high on mental model similarity did better projects than teams low on mental model similarity (Peterson et al., 2000).

As can be seen from this brief review, there is scarcity of research examining the predictive validity of SMM in the field settings. In an attempt to fill this gap, the present study examined the relationship between taskwork SMM similarity and team performance in the real life service teams.

1.3.4.2 Team Viability

Hackman (1987) defined group effectiveness with three general criteria: (a) ‘‘the productive output of the work group should meet or exceed the performance standards of the people who receive and/or review the output,’’ (b) ‘‘the group experience should, on balance, satisfy rather than frustrate the personal needs of group members,’’ and (c) ‘‘the social processes used in carrying out the work should maintain or enhance the capability of members to work together on subsequent team tasks’’ (p. 323). In the literature, some researchers (e.g., Barrick et al., 1998) used the third criteria in the Hackman taxonomy to refer to team viability construct as one critical measure of team effectiveness (Kozlowski & Ilgen, 2006). Sundstrom (1990) defined team viability as “members’ satisfaction, participation, and willingness to continue working together” (p.122). Team viability was regarded as a broad construct capturing both the satisfaction of teammates with their membership and their behavioral intent to continue working with their team (Barrick et al., 1998; Hackman, 1987).

In a recent study, Bell and Marentette (2011) clarified and redefined team viability construct by differentiating it from related constructs, namely team satisfaction, team performance, and team cohesion. According to them, although team viability has substantial contributions to understanding team effectiveness, there are construct confusion and inconsistencies among researchers’ conceptualizations and operationalizations of team viability. Accordingly, they redefined team viability as “the team’s capacity for the sustainability and growth required for success in future performance episodes” (p. 279).

Barrick et al. (1998) examined the relationship between team composition variables (e.g., cognitive ability and personality) and team effectiveness (i.e., performance and team viability) in actual work settings. In relation to the focal

interest of the present study, they found that teams with higher cognitive ability, extraversion, and emotional stability obtained higher team viability ratings from their supervisors. In their meta-analysis, Balkundi and Harrinson (2006) sought answers to the question of "How do members' social network structures help or hinder team viability?"In this meta-analysis, as social network structure types, instrumental tie (pathways of work related advice among team members) and expressive tie (friendship among team members) were studied. Density of tie was studied and was calculated by dividing existing ties between team members to the maximum possible number of such ties. It was found that although density of both instrumental and expressive ties was associated with team viability, expressive tie density was more strongly related with team viability than was instrumental tie.

To my knowledge, the study of Resick et al. (2010) is the only study examining the relationship between SMM and team viability. In their study with ad hoc teams, they hypothesized that both task-focused mental model similarity and accuracy were related with team viability. However, the findings supported the hypothesized relationship between mental model similarity and team viability only. In the present study, it was expected that higher SMM similarity would lead to higher team viability among team members.

1.3.4.3 Team Potency

Shea and Guzzo (1987) proposed three determinants of group effectiveness: interdependence among group members, outcome interdependence, and potency. Group potency is the collective belief held by team members that it can be effective (Guzzo, et al., 1993). Since both self-efficacy and group potency are appraisals of capabilities, group potency is regarded as self-efficacy's group level counterpart (Gully, Joshi, Incalcaterra, & Beaubien, 2002; Lee, Tinsley, & Bobko, 2002). However, they are clearly distinct constructs and they differ in two ways (de Jong, de Ruyter, & Wetzels, 2005). Firstly, while self-efficacy is individual belief about one's own competence, group potency is a shared belief about team competency. Secondly, group potency is context and task free, whereas self-efficacy is related to beliefs about task and context-specific activities. Some studies yielded support for the relationship of group potency with team effectiveness (e.g. Pearce, Gallagher, &

Ensley, 2002) and outcomes of satisfaction and performance (Guzzo et al., 1993; Gully et al., 2002; Hecht, Allen, Klammer, & Kelly, 2002). It was also found that group potency had a critical role in reducing negative effects of time pressure on project progress (Gevers, van Eerde, & Rutte, 2001).

Findings yielded in a collective cultural environment suggested group cohesion and group norms as antecedents, performance and satisfaction as consequences of group potency (Lee et al., 2002). Akgun, Keskin, Byrne, and Imamoglu (2007) examined possible consequences and antecedents of team (or group) potency in software teams in the Turkish context. They found speed-to-market, development cost, and market success of the product as consequences of team potency; trust among project team members, past experiences of the members, and team empowerment as antecedents of team potency.

According to the researchers, similarity among team members' mental models allow team members to accurately explain and predict team tasks, coordinate their activities and adjust their behavior according to requirement of team tasks and need of teammates (Cannon-Bowers, Salas & Converse, 1993). Based on the role of mental model similarity on team coordination and interaction, in the present study, it was expected that SMM similarity facilitates development of team potency among team members.

2.2.4 The Present Study and Hypotheses

The present study examined the individual differences variables of agreeableness, extraversion and conscientiousness, and their relevant facets as antecedents of SMM similarity. Furthermore, the present study examined the role of SMM on critical team outcome variables of team performance, team viability, and group potency. The proposed relationships were examined in a naturalistic setting with service teams. Based on differential relationship exhibited by implicit (i.e., taskwork SMM, teamwork SMM) and explicit measure of SMM, relationships were hypothesized separately. In this regard, there were three indices of SMM similarity as taskwork SMM, teamwork SMM and explicit SMM. Based on the reviewed literature, the following hypotheses were tested.

Hypothesis 1a: Team mean Agreeableness is positively related to taskwork SMM, teamwork SMM and explicit SMM.

Hypothesis 1b: Team mean Trust is positively related to taskwork SMM, teamwork SMM and explicit SMM.

Hypothesis 1c: Team mean Cooperation is positively related to taskwork SMM, teamwork SMM and explicit SMM.

Hypothesis 2a: Team mean Extraversion is negatively related to taskwork SMM, teamwork SMM and explicit SMM.

Hypothesis 2b: Team mean Warmth is positively related to taskwork SMM, teamwork SMM and explicit SMM.

Hypothesis 3a: Team mean Conscientiousness is positively related to taskwork SMM, teamwork SMM and explicit SMM.

Hypothesis 3b: Team mean Achievement Striving is positively related to taskwork SMM, teamwork SMM and explicit SMM.

Hypothesis 4: Taskwork SMM is positively related to team performance.

Hypothesis 5: Taskwork SMM, teamwork SMM and explicit SMM are positively related to team viability.

Hypothesis 6: Taskwork SMM, teamwork SMM and explicit measure of SMM are positively related to team potency.

CHAPTER 2

METHOD

2.1 Participants

Participants were 139 employees working in teams (N = 29) in a technology retail stores called as communication centers. Teams involved three positions: cashier, sale advisor, and communication advisor. Among 29 teams, two teams with missing members were not included in hypothesis testing but included in exploratory factor analysis performed on items of study measures. The final sample included 128 participants from 27 teams, with three to seven members in each, (*M* = 4.99, *SD* = 1.03). Of the participants, 43 % were sales advisor, 32.8 % were communication advisor, 18 % were cashier, and remaining did not indicate their position. In terms of gender, 62.5 % (N = 80) were women, 34.40 % (N = 44) were men, and 3.1 % of participants did not indicate their gender. Age of the participants ranged from 18 to 42 years (*M* = 25.29, *SD* = 3.79). With respect to education, 47.7 % of the participants had a four-year college degree, 46.1 had a high school degree, 3.1 % had a two-year college degree, 1.60 % had a secondary school degree and .8 % had an elementary school degree. Participants' tenure varied from 1 to 240 months for GSM sector (*M* = 35.41 *SD* = 36.61) and 1 to 87 months for the present communication center (*M* = 13.41, *SD* = 15.01).

2.2 Measures

2.2.1 Brief Version of Personality

Five personality factors, conscientiousness, agreeableness, neuroticism, openness to experience and extraversion were measured with a 47 item scale adopted from Benez-Martinez and John (1998). The measure was adopted to Turkish by Demir (2012). Each item was rated on a 5- point Likert scale ranging from 1= strongly disagree to 5 = strongly agree. Sample items were "I persevere until the task

is finished" for Conscientiousness, "I have a forgiving nature" for Agreeableness, "I can be tense" for Neuroticism, "I am curious about many different things" for Openness to Experience, and "I am talkative" for Extraversion. While each of Conscientiousness, Openness to Experience, and Extraversion factors was assessed with 9 items, Agreeableness and Neuroticism were measured with 10 items each. Demir (2012) reported adequate reliability values for each personality factors, specifically they reported .80 for Conscientiousness, .70 for Agreeableness, .81 for Neuroticism, .76 for Openness to Experience, and .89 for Extraversion. Although the internal consistency estimates for Openness to Experience (α = .82), Neuroticism (α = .81) and Extraversion (α=.79) were satisfactory in the present study, reliability values of Conscientiousness (α=.69) and Agreeableness were (α=.66) slightly lower than desired.

2.2.2 Personality facets of Trust, Cooperation, Achievement Striving and Warmth

Trust and Cooperation facets of Agreeableness, Achievement Striving facet of Conscientiousness, and Warmth facet of Extraversion were measured with 10 items each from the International Personality Item Pool (IPIP) (Goldberg, 1999). Items were translated to Turkish for the present study. Two psychology graduate students translated the items to Turkish and an I/O psychologist with a Ph.D. and a graduate student evaluated the appropriateness of the translation item by item focusing on the conceptual equivalence of the items in both languages. Each facet scale has 10 items rated on a 5- point Likert scale ranging from 1= strongly disagree to 5 = strongly agree. Sample items were, "I trust what people say" for Trust, "I contradict to others (R)" for Cooperation, "I set high standards for myself and others" for Achievement Striving, and "I take an interest in other people's lives" for Warmth scale. A number of exploratory factor analyses were run, and for each scale, items with a loading below .30 were not retained. In this regard, two items from Warmth, three items from Cooperation, two items from Achievement Striving, and three items from Warmth were dropped from respective scales. Results produced adequate internal consistency estimates for both Cooperation (α=.73) and Trust

(α=.73), but reliability values of Achievement Striving (α=.65) and Warmth were (α=.66) slightly below the adequate value for the present study.

2.2.3. Assessment of Teamwork SMM and Taskwork SMM: Implicit Approach

In measurement of team mental models, content and methods of elicitation (technique identifying mental model content), representation (technique uncovering data structure and relations of elements), and calculation of mental model similarity should be taken into account (DeChurch & Mesmer-Magnus, 2010; Mohammed, Klimoski, & Rentsch, 2000). Content of team mental models includes task and team related concepts. There are common team concepts used in previous research but task concepts are usually unique to each team context. Due to context-dependent nature of SMM contents, mental model contents should be identified for each SMM measurement (Mohammed & Hamilton, 2012). Hence, for the present study, task and team related concepts were developed through a task analysis in the same job context.

The task and team processes were identified through conducting interviews and administering questionnaires. For this purpose, first 11 members of two different teams were interviewed by posing questions focusing on understanding the nature of the teams' tasks and processes. Then, task statements and team process concepts were developed based on participants' responses to the interview questions for each position (See Appendix A, B, C for task statements for cahier, sale advisor, and communication advisor positions, respectively). Next, to capture common task concepts and team processes for the three positions, the same participant group was asked to complete a questionnaire including common task statements for the three positions (e.g., offering appropriate products to meet the specifications customers are looking for) and team processes (e.g., coordination). Participants were expected to indicate whether each task and team process is related with their job and if so, they were expected to indicate the frequency for both task statements and team processes and the importance for task statements (See Appendix D for team task analysis questionnaire). Further, criticality score of each task were computed by weighting participants' responses of task importance and frequency. Seven task statements with the highest criticality scores were retained. In representation of taskwork SMM

content, a decision was made to use the phrase form of the task statements. The same I/O psychologist and the graduate student transformed each task statement to phrase (i.e. taskwork concept) representing underlying meaning of the related task statement. For example, to represent task statement of "Promoting products that meet the customer's demands and informing him/her about product qualities", the taskwork concept of "promote products" was used. Developed taskwork concepts were *greeting and sending off customers*, *resolving customer's complaints*, *learning customer's request*, *draw up documents*, *promote products*, *monitoring transaction*. Among evaluated team processes, four team processes (i.e. *information sharing*, *coordination*, *agree to tell the same story or act in the same way*, and *back up*) were retained for relatedness rating for team work SMM. Three additional concepts of teamwork SMM (i.e., *collaborative problem solving*, *intrateam coaching*, and *team spirit*) were selected from previous research on SMM (e.g., Mathiue, et al., 2000) and studies on teamwork behavior (e.g., Rousseau, Aube & Savoi, 2006). Eventually, seven task related concepts for taskwork SMM and seven team related concepts for teamwork SMM were determined for relatedness ratings.

To elicit both task-work and team-work mental models, participants in the main study were asked to rate the relatedness of seven task and seven team concepts in pairs on a 9-point Likert-type scale ranging from -4= negatively related to +4 = positively related. In line with the measurement methods used in previous studies on SMM, initially, participants were asked to give relatedness score for pairs of concept in a matrix including every concept in both down and top side (See Appendix E for relatedness matrix example). However, it was observed that giving negative ratings and pairing concepts on matrix were not clearly understood by some of the participants. Therefore, a decision was made to use a user friendlier method. Firstly, negative values in the scale response format were excluded and a 9-point Likert scale ranging from 1 = not at all related to 9 = highly related was used. In addition, definitions of each concept were included in the new method to prevent confusion among rated concepts. Secondly, two different types of scale formats were developed. In the first format, participants were expected to give ratings to paired concepts, and write down the score. In the second format, participants were expected to rate paired concepts on 9-point Likert type scale and circle appropriate score. To

decide which method was user friendly and understandable, these two methods were compared by five engineering graduate students, five literature graduate student and ten psychology undergraduate students in terms of applicability of each format. The questionnaire for relatedness rating format is displayed in Appendix F. In examination of the responses given to the questionnaires, using the second format seemed more appropriate. Thus, in the main study, participants rated 21 pairs of seven taskwork concepts and 21 pairs of seven teamwork concepts on a 9-point Likert- type scale ranging from 1 = not at all related to 9 = highly related.

To represent task-work and team-work mental model, a network scaling technique using a specific program Pathfinder (www.interlinkinc.com) was used (e.g., Fisher et al., 2012 & Lim & Klein, 2006). Pathfinder creates direct or indirect links between rated concepts based on relatedness ratings (Schvaneveldt, 1990) and generates two networks (task and team) for each team member. These networks are then treated as each individual's mental model for the related construct, task work or team work. To generate similarity index (Sim), Pathfinder gets ratio of total number of links and number of common links among each network pairs. Networks pairs with no common links have a Sim index of 0 and identical network pairs sharing all links have a Sim index of 1. For the present study, to generate taskwork SMM value of each team, task-work networks of team members were compared in pairwise (e.g., for a team with three members, three comparisons are run) and then all similarity indices obtained in each pairwise comparison were averaged. This procedure was also followed to obtain the teamwork SMM value for each team.

2.2.4 Team Assessment and Diagnostic Instrument (TADI): Explicit Approach

To measure team shared mental model via a questionnaire, Team Assessment and Diagnostic Instrument (TADI) developed by Johnson et al. (2007) was used. The instrument was originally developed for the assessment of team related knowledge with five factors: task and team knowledge, task and communication skills, attitudes toward teammates and task, team dynamics and interactions, and resources and working environment. Each team member rates his/her team on TADI using a 5-point Likert-type scale ranging from 1 = strongly disagree to 5 = strongly agree. In its original form, the TADI has 42 items. However, in the present study, 15 item

short version of the scale (Skorski, 2009) was used. The Turkish adaptation of the scale was conducted by Johnson, Top, and Yukselturk (2011) and the reliability values were .95 for task and team knowledge, .95 for task and communication skills, .89 for attitudes teammates and task, .97 team dynamics and interactions, and .93 for resources and working environment. The reliability value for the 15 item version used in the present study was .94.

2.2.5 Performance

The retailer in which the study was conducted has a performance-based reward system for work teams in each store. Bonuses are earned to the extent that sales are higher than the set goals. There are five different sale categories. These are prepaid line sale, postpaid line sale, transfer from other operators (MNT), transfer from prepaid to postpaid (switch), and data (internet). For each category, team goals for unit sold were set for each team (store/communication center) by the regional sale executive of the GSM organization and individual goals were set by the managers of the each communication center. The percentage of meeting the set goal is recorded by the GSM organization and used as an index of performance level for each team in each performance category. Since a substantial percentage of participants (16.40 %) had no more than 3 months experience in their present communication center, a decision was made to use December 2013 monthly performance records as indices of performance rather than the annual performance records.

To have a composite performance score composed of five categories, weights for each category had to be identified. Subject Matter Experts (three managers of communication centers) were asked to give weights to each of the five performance categories reflecting their importance in the overall sale performance of the teams. Performance in each category was multiplied with specified weights. Weights are .13 for prepaid line sale, .27 for postpaid line sale, .30 for transfer from other operators (MNT), .16 for transfer from prepaid to postpaid (switch), and . 14 for data (internet) sale. This weighted composite value was taken as performance value of each team in the present study.

2.2.6 Team Viability Measure

Participants assessed their team maintenance with seven items developed by Hackman (1988) which was translated to Turkish for the present study. Two psychology graduate students translated the items to Turkish and one experienced I/O psychologist and a graduate student evaluated appropriateness of translations by focusing on the conceptual equivalence of the items in both languages. The items are rated on a 5- point Likert-type scale ranging from 1 = strongly disagree to 5 = strongly agree. A sample item of the scale is "Members of the team care a lot about it, and work together to make it one of the best." Reliability of the scale was reported to be .86 (Nandkeolyar, 2008). For the present study, internal consistency estimate of the scale was .78.

2.2.7 Team Potency Measure

The team member's perception of team potency was measured with seven items developed by Guzzo et al. (1993) and they were translated to Turkish for the present study. Same translation and conceptual equivalence checking procedures were followed for the potency measure as well. The items of the scale are rated on a 5-point Likert type scale ranging from 1 = strongly disagree to 5 = strongly agree. Two sample items are "Our team feels it can solve any problem it encounters" and "Our team believes it can be very productive." Internal consistency estimate of the scale was .82 in the present study.

2.2.8 Demographic Information Form

A demographic information form including questions on age, gender, city, position in the store, education degree, tenure was administered to individual team members.

2.3 Procedure

Each team was visited in their communication center (i.e., store). Before visits, the teams were informed by their manager that they would be asked to participate in a survey conducted as part of a master's thesis study. Due to multilevel structure of the study (level 1: employee, level two: team) and essentiality of team

building in each team, team members with less than one month experience were not included in the analyses. Prior to data collection, informed consent of the participant was obtained. Participants filled out the survey including individual personality measures at the factor (i.e., Conscientiousness, Agreeableness, Neuroticism, Openness to Experience, and Extraversion) and facet level (i.e.,Trust, Cooperation, Achievement Striving, and Warmth), team potency and team viability measures, and two SMM measures: one explicit (i.e., Team Assessment and Diagnostic Instrument) and one implicit (i.e., Relatedness Rating of Teamwork and Taskwork). The administration of the survey package took about 10 to 15 minutes (see Appendix G for the survey package).

2.4 Data Aggregation

For the present study, though majority of the data were collected at the individual level (e.g. personality, team potency and viability), hypotheses of the study were expected at the team level. Therefore, individual level data had to be aggregated to the team level. Team potency, viability, and explicit measure of shared mental model (i.e., TADI) represent shared understanding among team members. Thus, to aggregate obtained scores in these variables, whether team members showed agreement in related constructs needed to be examined. For this purpose, Index rwg(j), (James, Demaree, & Wolf, 1984; 1993) and intraclass correlation ICC(1), were calculated. While the former index represents comparison of observed group variance to an expected random variance, ICC(1) indicates interrater reliability. ICC(1) is calculated as (MSB-MSW)/[MSB+[(k-1)*MSW].

For interrater agreement, rw_{wg} was calculated with expected variance of 5 point scale with a uniform null distribution (σ^2_{EU}=2). Based on the suggestion of James et al.'s (1984), negative rwg values were replaced with zero. For aggregation, the cut off score for average rwg(j) was suggested to be .70 (Klein & Kozlowski, 2000). However, in the present study, the average rwg values were below the cut-off score for both team viability and team potency (.28 for team viability and .64 for team potency) and for TADI (.60). The results of the one-way ANOVA used to calculate the ICC (1) were significant for team potency (F(26, 101) =2.06, $p < .01$), team viability (F(26, 101) =2.19 , $p < .01$), and SMM (F(26, 101)=1.97, $p < .01$).

With respect to ICC (1) scores, each of the measures (i.e., team viability, potency, and TADI) produced adequate scores, .19 for team viability, .17 for team potency and .16 for SMM, respectively and well above the median ICC (1) value of .12 reported by James (1982). With respect to ICC (1, 5), team viability produced .55, team potency .39 and SMM .47. These analyses together provided evidence that there were agreement among members' perceptions, and hence aggregation of the individual scores was justified.

Individual scores were aggregated based on specified composition models (i.e., using team minimum, team mean, team maximum, team variance scores) after justification of aggregation. As team potency and team viability reflected the collective perception of team members, an additive composition model (i.e., using team mean) was used in aggregation and the team means were used to represent each team's score for team viability and potency measures.

There have been three common three calculation methods used in previous research to aggregate individual scores in measures like the TADI. First way is using team mean on the TADI. As previously mentioned, each category/factor of TADI (i.e., task and team knowledge, task and communication skills, attitudes toward teammates and task, team dynamics and interactions, and resources and working environment) was assessed with three items. Each team member score in each factor was computed by averaging his/her responses to the three items. To obtain the overall TADI score for each team member, each team member's scores on the five factors were averaged. Further, to assess the degree of SMM content similarity for each team, the overall TADI scores of all team members were averaged (Skorski, 2009).

The second way is to compute team standard deviation (SD) to estimate within team variability (Harrison & Klein, 2007).Within team SD on the TADI represents perceptional variability in the members' mental models. Thus, high SD reflects high variability among team member's mental models and less SMM within team. Therefore, a decision was made to subtract within team SD from 1 (1-SD) to reverse value in order to generate the SMM score (Guchait, & Hamilton, 2013).

The last way to assess the degree of SMM is to use within team agreement score (r_{wg}) on the TADI measure. James and his colleagues (1984) demonstrated that the r_{wg} score controls response biases such as leniency and social desirability. Within team agreement in items of the TADI was computed for each team, representing each team's SMM.

For the present study, the following measures of SMM were used: taskwork SMM (an implicit measure via Pathfinder), teamwork SMM (an implicit measure via Pathfinder), TADI mean, TADI (1-SD), and TADI rwg: The SMM scores of the teams obtained through these measures are presented in Table 1. The SMM scores range from zero (dissimilar mental models) to one (similar mental models) for both implicit measures, TADI (1-SD), and TADI (Rwg). The SMM scores for TADI (Mean) range from zero (dissimilar mental models) to five (similar mental models). Teams' obtained SMM scores in Teamwork, Taskwork, and TADI can be seen in Appendix H. As shown in Appendix H, the three SMM scores of teams did not seem to covary; they varied considerably from measure to measure and each measure had diverse six teams with the highest SMM scores.

Team level composition for personality factors and facets were also computed. Among various methods mentioned in the introduction chapter, since several researchers treated using mean score as the most robust indicator of team composition (Barrick, et al.,1998; Bell, 2007), team mean was used to represent each team score in each personality factor (i.e., Agreeableness, Extraversion, Conscientiousness, Openness to Experience, and Neuroticism) and facet (i.e., Trust, Cooperation, Achievement Striving, and Warmth). In addition, team variance scores on Agreeableness, Trust, and Warmth were also used as an index of team heterogeneity in each of these variables.

CHAPTER 3

RESULTS

3.1 Overview

Results are presented in five sections: (1) data screening; (2) factor analyses; (3) bivariate correlations between the study variables and descriptive statistics; (4) hypothesis testing regarding antecedents of SMM; and (5) hypothesis testing concerning consequences of SMM. In the first section, data were examined for missing values, outliers and checked for normality assumptions. In the second section, the results of the exploratory factor analyses conducted on the four personality facet measures (i.e., warmth, achievement striving, trust, and cooperation), team viability measure, team potency measure, and the explicit measure of SMM (i.e., TADI) are presented. In the third section, correlations between study variables and descriptive statistics are presented with means and standard deviations. The fourth section includes results concerning the testing of the hypotheses regarding antecedents of SMM (i.e., Hypotheses 1a, 1b, 1c, 2a, 2b, 3a, 3b). In the last section, results concerning the testing of the hypotheses regarding consequences of SMM are presented (i.e., Hypotheses 4, 5, 6).

3.2 Data Screening

Data for personality factors and facets, team potency, viability, and explicit SMM measure were examined for missing values, outliers and normality assumption. Four participants had more than 5 % missing value and they were deleted. Missing data in a case was replaced with the mean of the team that the case was a member of. One participant appeared to be an outlier ($-4.00 < z < 4.00$) on openness to experience measure and hence was deleted. With the criterion of $p<.001$ for Mahalanobis distance, no multivariate outlier was identified at the team level. Finally, normality assumption was in general met for the variables.

3.3 Factor Analyses and Reliabilities

A number of exploratory factor analyses with principal components as the method for extraction were conducted on the scales translated to Turkish for the present study (i.e., warmth, achievement striving, trust, and cooperation, team viability, team potency, and explicit measure of SMM). A factor loading of .30 was used as the inclusion criteria for an item in all factor analyses.

First, a factor analysis with varimax rotation was performed on the 10 items of the Trust Scale. Initially, four factors explaining 65.18 % of total variance were extracted. In addition, Horn's parallel analysis (Watkins, 2000) suggested a three factor solution. However, to retain the expected single factor structure, the analysis was rerun by restricting the solution to one factor. The single factor explained 29.67 % of the total variance. With a cutoff of .30 for inclusion of an item in a factor, two items did not load the factor. The remaining eight items had loadings ranging from .36 to .73 and (See Appendix I for item loadings). While the initial 10 item scale produced internal consistency estimate of .72. The internal consistency estimate of the scale with eight items was adequate ($\alpha = .73$).

Second, an exploratory factor analysis with varimax rotation was conducted on the Cooperation Scale. A three-factor solution explaining 54.47 % of total variance was extracted. However, Horn' parallel analysis suggested a two factor solution and there were cross loading items. Hence, the factor analysis was rerun by forcing the number of factors to two. The two factor solution explained 43.56 % of the total variance. One item did not load on any factor. Of the remaining nine items, seven items loaded on the first factor with loadings ranging from .48 to .80, and two items loaded on the second factor with loadings of .71. Items under the first factor were decided to be included in scale of Cooperation (See Appendix J for item loadings). While, the initial 10 item scale produced internal consistency estimate of .58, the internal consistency estimate of the scale with eight items was .73.

Third, an exploratory factor analysis with varimax rotation was conducted on the scale of Achievement Striving. Initially, four factors explaining 61.11 % of the total variance were extracted. Following Horn's parallel analysis suggestion, a single

factor solution, the factor analysis was rerun by forcing the number of factors to one. The single factor explained 26.73 % of the total variance. Among the ten items, two items with loadings below .30 were excluded, and the remaining eight items had loadings ranging from .47 to .73 (See Appendix K for item loadings). The initial 10 item scale produced internal consistency estimate of .61. The internal consistency estimate of the scale with eight items was somewhat below the expected level (α=.65), yet acceptable.

Fourth, an exploratory factor analysis with varimax rotation was performed on the 10 items of Warmth scale. In line with Horn's parallel analysis (Watkins, 2000), initial factor solution was a three factor solution explaining 53.60 % of the total variance. However, there were some crossloading items among two of three factors. Hence, the analysis was rerun by forcing the number of factors to two. The two factor solution explained 40.00% of total variance. First factor explained 25.17 % of the total variance and seven items loaded on this factor with loadings ranging from .34 to .67. The second factor explained 14.84 % of the variance and three items loaded to the factor with loadings ranging from .57 to .64. A decision was made to include seven items that loaded on the first factor in the scale of Warmth (See Appendix L for item loadings). The initial 10 item scale produced internal consistency estimate of .63. The internal consistency estimate of the scale with seven items was α=.65.

Fifth, an exploratory factor analysis with direct oblimin rotation was conducted on the seven items of Team Viability scale. Initially, two factors explaining 59.44 % of the total variance were extracted; but, parallel analysis suggested presence of a single-factor solution. Moreover, there were some crossloading items, and the correlations between these two factors was substantial (*r* = .38), suggesting a single factor structure. Thus, the analysis was rerun by forcing the number of factors to one. The single factor explained 44.30 % of the total variance and all items loaded on the single factor with loadings ranging from .52 to .77 (See Appendix M for item loadings). The scale produced internal consistency estimate was .79.

Sixth, an exploratory factor analysis with varimax rotation was conducted on the seven items of Team Potency scale. Initial solution was a one-factor solution also supported by Horn's parallel analysis. The single factor explained 47.44 % of the total variance, and all items were loaded under the factor, with loadings ranging from .51 to .75 (See Appendix N for Item Loadings). The scale produced internal consistency estimate value of .81 in the present study.

Lastly, an exploratory factor analysis with varimax rotation was performed on the 15 items of the TADI. In line with Horn's parallel analysis, initial solution was a single factor solution, as expected. The single factor explained 56.47 % of the total variance and all items were loaded on the single factor with loadings ranging from .64 to .82 (See Appendix O for item loadings). The internal consistency estimate of the scale was .94 in the present study.

3.4 Correlations between the Study Variables and Descriptive Statistics

Table 1 summarizes descriptive statistics and correlations of all variables at the individual level. With respect to factor and facet relationships, as shown, Agreeableness significantly correlated with its facets of Trust (r =. 39, p < .01) and cooperation (r = .52, p < .01). Moreover, Extraversion was also found to be correlated with its facet Warmth (r = .29, p < .01). Finally, there was a positive correlation between Conscientiousness and its facet Achievement Striving (r = .35, p < .05). To have statistical power, sample size has importance (Cohen, 1988). As team level analysis have small sample size (N=27), in the present study, alpha level was relaxed from .05 to .10. Table 2 presents descriptive statistics and zero order correlations among the hypothesized and control variables at the team level. As can be seen in Table 2, the study sample group evaluates their teams quite positive on team viability and potency variables. Specifically, they evaluated their teams as having relatively high levels of potency (M = 4.38) and also viability (M = 3.85). These two outcome variables were also found to be highly correlated, r = .74, p < .01. With respect to SMM measures, while the two implicit SMM measures (i.e., taskwork and teamwork) were highly correlated (r =. 72, p < .01), these two measures did not correlate with the three explicit self report measures of SMM (i.e., TADI Mean, TADI 1-SD, and TADI rwg), suggesting that the implicit and explicit

measures are quite independent. Hence a decision was made to test the hypotheses for explicit and implicit measures separately. As can be seen in Table 2, the three explicit measures of SMM were highly correlated with one another. Specifically, team mean TADI had a positive correlation with team reversed standard deviation of TADI (r = .73, p < .01) and team rwg of TADI (r = .83, p < .01). Moreover, there was a high correlation between team standard deviation of TADI and team rwg of TADI (r = .83, p < .01). Hence, a decision was made to test the hypotheses regarding explicit SMM with only one of the three explicit measures of SMM. As rwg is able to control response biases (James et al., 1984), I decided to use team rwg scores of SMM as the explicit SMM measure in hypothesis testing along with the two implicit measures of SMM (i.e., teamwork SMM and taskwork SMM). Team size was found to be negatively related to teamwork SMM (r = -.43, p < .01), and team experience was found to be negatively related to explicit SMM (r = -.50, p < .01).

3.5. Hypothesis Testing Concerning Antecedents of SMM

A number of hierarchical regression analyses predicting SMM separately for the three SMM measures (i.e., Task-work SMM, Team-Work SMM, and Explicit Measure of SMM) were conducted. Literature showed that educational and organizational level similarity, average team experience, team member recruitment, and team size were significantly associated with team member schema agreement (Rentsch, & Klimoski, 2001). Based on this literature, average team member's tenure in their present communication center in was controlled in the regression analyses. Hence, team size and average team tenure were entered in the first block as control variables and each hypothesized variable was entered in the second step. As shown in Table 3 through Table 11, team size entered in step one was related to teamwork SMM (β = -.43, p < .05), and team tenure was related to explicit measure of SMM (β = -.50, p < .01). With respect to antecedents of SMM, it was hypothesized that team composition in terms of Agreeableness (H1a) and its facets of Trust (H1b), and Cooperation (H1c) would be positively related to two types of implicit SMM measures and the explicit measure of SMM.

Table 1. Descriptives Statistics and Zero Order Correlations at Individual Level

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. SMM(TADI)	4.26	.74	–											
2. Team Viability	3.86	.86	.55**	–										
3. Team Potency	4.4	.60	.60**	.61**	–									
4. Trust	3.05	.74	-. 02	.08	.01	–								
5. Cooperation	4.21	.72	.11	.23**	.20*	.18*	–							
6. Achievement Striving	4.41	.51	.25**	.25**	.24**	-.10	.27**	–						
7. Warmth	4.23	.55	.20*	.11	.25**	.31**	.08	.27**	–					
8. Openness to Experience	4.51	.48	.27**	.11	.24*	.03	.13	.38**	.43**	–				
9. Neuroticism	2.84	.78	.05	-.16	-.12	-.13	-.39**	-.27**	-.24**	-.31**	–			
10. Conscientiousness	4.27	.57	.27**	.23*	.43**	.06	.33**	.35**	.18	.18	-.21*	–		
11. Agreeableness	4.17	.53	.33**	.38**	.41**	.39**	.52**	.32**	.42**	.28**	-.44**	.52**	–	
12. Extraversion	4.05	.69	.13	.15	.14	.08	.02	.24**	.29**	.36**	-.26**	.14	.12	–

Note. *$p < .05$,**$p < .01$, SMM. shared mental model. TADI. team assessment and diagnostic instrument.

Table 2. Means, Standard Deviations and Correlations of the Study Variables at the Team Level

	Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Team Size	–													
2	Team Tenure	.00	–												
3	Team Performance	-.08	.06	–											
4	Team Viability	-.27	.05	.05	–										
5	Team Potency	-.27	.08	.08	.74***	–									
Implicit SMM															
6	Teamwork SMM	-.43**	.00	-.08	.38**	.33*	–								
7	Taskwork SMM	-.18	-.03	-.34*	.39**	.32	.72	–							
Explicit SMM															
8	TADI (Mean)	-.16	-.27	.08	.70***	.82**	.28	.35*	–						
9	TADI (1-SD)	-.01	-.47**	.02	.21	.38*	.08	.20	.73***	–					
10	TADI (rwg)	-17	-.50	-.06	.45**	.51***	.22	.30	.83***	.89***	–				
Agreeableness															
11	Mean	-.18	.37*	.24	.34*	.35*	.42**	.41**	.12	-.19	-.12	–			
12	Variance	.24	.09	-.14	.03	-.24	-.22	-.12	-.36*	-.57***	-.48**	-.08	–		
Trust															
13	Mean	-.53**	.29	.05	.15	-.08	-.01	-.10	-.23	-.36*	-.18	.25	.10	–	

14	Variance	.07	.10	.02	-.03	-.18	-.23	-.31	-.25	-.38*	-.47**	-.27	.38*	.12	–
Cooperation															
15	Mean	.10	-.01	.07	.24	.20	.29	.42**	.14	-.02	-.03	.59***	.13	.12	.14
16	Variance	-.10	.24	-.09	.40**	.19	.05	-.02	.01	-.29	-.09	.03	.06	.20	-.01
Extraversion															
17	Mean	-48**	-.06	.05	.24	.07	.20	.03	-.01	-.32	-.04	-.07	.07	.31	.12
18	Variance	.07	-.22	.32	-.13	-.10	-.11	-.32	.17	.38**	.33	-.43**	-.23	-.22	-.25
Warmth															
19	Mean	-.21	.01	-.02	.12	.06	.34*	.14	-.13	-.29	-.06	.25	.26	.21	-.10
20	Variance	.14	-.16	-.17	-.47**	-.48**	-.39**	-,37*	-.28	-.08	-.30	-.32	.21	-.17	.41**
Conscientiousness															
21	Mean	.13	.06	.11	.08	.26	.04	.29	.21	-.01	.13	.34*	-.03	-.16	-.29
22	Variance	-.21	-.21	-.12	.25	.08	14	.15	-.08	-.21	-.16	.16	.30	.10	.12
Achievement Striving															
23	Mean	-.19	-.17	.05	.29	.14	.32	.37*	.19	.12	.21	-.05	.07	-.04	.10
24	Variance	-.07	.56**	.15	-.10	-.13	-.16	-.29	-.30	-.47**	-.45**	.12	.03	.26	.16
Neuroticism															
25	Mean	.06	-.03	-.10	.03	-.11	.15	-.02	.11	.21	.17	-.10	-.10	.07	.20
26	Variance	-.10	.42**	.23	.12	-.02	-.05	-.23	-.22	-.53***	-.39**	.19	.50***	.29	.17
Openness to Experience															
27	Mean	-.45	-.13	.06	.27	.29	.20	.18	.08	-.11	-.01	.29	.34*	.33*	.13
28	Variance	.48**	-.09	-.03	-.23	-.21	.02	-.05	-.01	.00	.00	-.06	-.19	-.33*	-.18
	Mean	4.74	13.42	1.11	3.85	4.38	.43	.43	4.47	.40	.32	4.31	.28	3.06	.50
	SD	1.10	8.79	.19	54	.40	.13	.12	.45	.38	.23	.30	.21	.42	.34

Table 2 continued. Means, Standard Deviations and Correlations of the Study Variables at the Team Level

	Variables	15	16	17	18	19	20	21	22	23	24	25	26	27	28
15	Mean	–													
16	Variance	-.26	–												
Extraversion															
17	Mean	-.09	.31	–											
18	Variance	-.63***	-.11	-.17	–										
Warmth															
19	Mean	.21	.19	.22	-.20	–									
20	Variance	-.19	-.15	-.22	.03	-.38*	–								
Conscientiousness															
21	Mean	.28	.06	.03	-.26	.10	-.25	–							
22	Variance	.06	.22	.23	-.22	-.04	.02	-.29	–						
Achievement Striving															
23	Mean	.19	.33*	.23	-.19	.49***	-.13	.18	-.09	–					
24	Variance	-.34	.10	.16	.05	-.34*	.07	-.02	.02	-.61***	–				
Neuroticism															
25	Mean	-.18	-.13	-.28	.41**	-.20	.20	-.37*	.11	-.26	.21	–			
26	Variance	.07	.35	.17	-.13	.49***	-.01	.16	-.20	.18	.21	-.26	–		
Openness to Experience															
27	Mean	.45**	-.03	.26	-47	.45	-.06	.06	.38*	.34*	-.30	-.26	.30	–	
28	Variance	-.24	.07	-.16	.35	-.07	.08	.13	-.22	-.16	.08	.35	-.15	-.63***	–
	Mean	4.22	.56	4.10	.49	4.24	.31	4.25	.34	4.41	.26	2.87	.61	4.53	.19
	SD	.34	.49	.38	.38	.23	.21	.28	.25	.26	.12	.36	.50	.24	.18

Note. *$p < .10$**$p < .05$, ***$p < .01$, SMM. shared mental model. TADI. team assessment and diagnostic instrument.

As shown in Table 3, the mean Agreeableness score entered at the second step explained incremental variance in both teamwork SMM, ΔR^2 = .14, $F_{(3,23)}$=3.79 , $p \leq .05$ and taskwork SMM, ΔR^2 = .18, $F_{(3,23)}$=2.11 , $p \leq .05$. Examinations of regression coefficients demonstrated that team mean Agreeableness was significantly related to both teamwork SMM (β =.42, $p < .05$) and taskwork SMM (β =.47, $p < .05$) but not related to the explicit SMM (β =.04, *ns*), supporting Hypothesis 1a for the two implicit SMM measures but not for the explicit SMM measure.

Table 3. Hierarchical Regression Analyses for Agreeableness in Predicting the three SMM measures

Variables	Team-work SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 1			.19	2.75*	
Team Tenure	.00	.02			
Team Size	-.43***	-2.35			
Step 2			.33	3.79**	.14
Team Tenure	-.15	-.82			
Team Size	-.36*	-2.06			
Agreeableness	.42**	2.22			
	Task-work SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 1			.03	.438	
Team Tenure	-.03	-.12			
Team Size	-.18	-.92			
Step 2			.22	2.11**	.18
Team Tenure	-.20	-1.00			
Team Size	-.10	-.53			
Agreeableness	.47**	2.31			
	Explicit SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 1			28	4.74**	
Team Tenure	-.50***	-2.91			
Team Size	-.17	-1.01			
Step 2			.29	3.05**	.00
Team Tenure	-.52**	-2.72			
Team Size	-.17	-.93			
Agreeableness	.04	.22			

Note. * $p < .10$, ** $p < .05$,*** $p < .01$, SMM. Shared mental model.

Table 4 displays the results regarding Hypothesis 1b. As can be seen in the table, team mean Trust entered at the second step did not explain any incremental variance. It was found to be not related to team-work SMM (β = -.37, *p* = .11), task-work SMM (β =-.29, *ns*) and explicit measure of SMM (β = -.19, *ns*), refuting hypothesis Hypothesis 1b for both explicit and implicit measures.

Table 4. Hierarchical Regression Analyses for Trust in Predicting the three SMM measures

Variables	Team-work SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 1			.19	2.75*	
Team Tenure	.00	.02			
Team Size	-.43**	-2.35			
Step 2			.27	2.88*	.09
Team Tenure	.11	.60			
Team Size	-.63***	2.94			
Trust	-.37	-1.66			
	Task-work SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 1			.03	.43	
Team Tenure	-.03	-.12			
Team Size	-.18	-.92			
Step 2			.09	.74	.05
Team Tenure	.06	.29			
Team Size	-.34	-1.41			
Trust	-.29	-1.17			
	Explicit SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 1			.28	4.74**	
Team Tenure	-.50***	-1.01			
Team Size	-.17	-2.91			
Step 2			.31	3.39**	.02
Team Tenure	-.45***	-1.32			
Team Size	-.28	-2.41			
Trust	-.19	-.88			

Note. * $p < .10$, ** $p < .05$, *** $p <. 01$, SMM. Shared mental model.

On an exploratory basis the above analyses were repeated by using Trust heterogeneity (variance) as the predictor. As shown in Table 5, team variance on

Trust entered at the second step explained incremental variance for only explicit SMM measure, ΔR^2 = .17, $F_{(3,23\ )}$=6.34 , $p \leq$ .01. Regression coefficients showed that team heterogeneity (variance) on Trust was negatively related to the explicit SMM (β =-.42, $p \leq .01$) but not significantly related to taskwork SMM (β =-.30, p = *.14*) and teamwork SMM (β =-.21, p = *.28*). That is, as dissimilarity in level of trust among team member increased, similarity of team members' mental models was likely to decrease.

Table 5. Hierarchical Regression Analyses for Trust Variance in Predicting the three SMM measures

Variables	Team-work SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 1			.19	2.75*	
Team Tenure	.00	.02			
Team Size	-.43**	-2.35			
Step 2			.23	2.27	.04
Team Experience	.03	.14			
Team Size	-.42**	-2.28			
Trust	-.21	-1.12			
	Task-work SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 1			.03	.428	
Team Tenure	-.03	-.12			
Team Size	-.18	-.92			
Step 2			.12	1.09	.09
Team Tenure	.01	.03			
Team Size	-.16	-.84			
Trust	-.30	-1.54			
	Explicit SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 1			.28	4.74**	
Team Tenure	-.50***	-2.91			
Team Size	-.17	-1.01			
Step 2			.45	6.34***	.17
Team Tenure	-.46***	-2.97			
Team Size	-.15	-.95			
Trust	-.42**	-2.67			

Note. * p < .10, **p < .05,***p < .01, SMM. Shared mental model.

Results concerning Hypothesis 1c which predicted a positive relationship between Cooperation with the three measures of SMM are summarized in Table 6. The second step of regression explained incremental variance for both team work SMM, ΔR^2 = .11, $F_{(3,23\ )}$=3.25 , $p \leq$ .07 and task work SMM, ΔR^2 = .20, $F_{(3,23\ )}$= 2.28 , $p \leq .05$. Regression coefficients showed that team mean cooperation was positively related to team-work SMM (β = .33, $p \leq .07$) and task-work SMM (β =.44, $p \leq .05$) but not related to the explicit SMM (β = -.02, *ns*), supporting Hypothesis 1c for the two implicit SMM measures but not for the explicit measure.

Table 6. Hierarchical Regression Analyses for Cooperation in Predicting the three SMM measures

Variables	Team-work SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 1			.18	2.75*	
Team Tenure	.00	.02			
Team Size	-.43**	-2.35			
Step 2			.30	3.25**	.11
Team Tenure	.01	.04			
Team Size	-.46**	-2.64			
Cooperation	.33*	1.90			
	Task-work SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 1			.03	.43	
Team Tenure	-.03	-.12			
Team Size	-.18	-.92			
Step 2			.23	2.28	.20
Team Tenure	-.02	-1.15			
Team Size	-.23	-1.23			
Cooperation	.44**	2.41			
	Explicit SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 1			.28	4.74**	
Team Tenure	-.50***	-2.91			
Team Size	-.17	-1.01			
Step 2			.28	3.03**	.00
Team Tenure	-.50***	-2.85			
Team Size	-.17	-.97			
Cooperation	-.02	-.12			

Note. * $p < .10$, ** $p <. 05$, *** $p < .01$, SMM. Shared mental model.

Hypothesis 2a proposed a negative relationship between team mean Extraversion and the three measures of SMM. As shown in Table 7, Extraversion explained incremental variance only in the explicit SMM, $\Delta R^2 = .03$, $F_{(3,23\ )}=3.53$, $p \leq .05$. However, it was found that team composition in terms of Extraversion exhibited nonsignificant relationship with team-work SMM (β = -.02, *ns*), task-work SMM (β = -.08, *ns*), and the explicit SMM (β = -.20, *ns*), refuting Hypothesis 2a.

Table 7. Hierarchical Regression Analyses for Extraversion in Predicting the three SMM measures

Variables	Team-work SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 1			.19	2.75*	
Team Tenure	.00	.02			
Team Size	-.43**	-2.35			
Step 2			.19	1.76	.00
Team Tenure	.00	.02			
Team Size	-.44*	-2.05			
Extraversion	-.02	-.07			
	Task-work SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 1			.03	.43	
Team Tenure	-.03	-.12			
Team Size	-.18	-.92			
Step 2			.04	.31	.01
Team Tenure	-.03	-.15			
Team Size	-.22	-.95			
Extraversion	-.08	-.34			
	Explicit SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 1			.28	4.74**	
Team Tenure	-.50***	-2.91			
Team Size	-.17	-1.01			
Step 2			.32	3.53**	.03
Team Tenure	-.52***	-2.98			
Team Size	-.27	-1.37			
Extraversion	-.21	-1.04			

Note. * $p < .10$, ** $p < .05$, *** $p < .01$, SMM. Shared mental model.

In response to this unexpected finding concerning the antecedent role of Extraversion, based on curvilinear relationship obtained between Extraversion and positive team outcomes (e.g., Barry & Stewart, 1997), a decision was made to test the existence of a non-linear, more specifically a quadratic, relationship between Extraversion and SMM on an exploratory basis. As Table 8 shows, the inclusion of a quadratic term improved model fit (ΔR^2 = .14, p < .10) in predicting only taskwork SMM indicating a curvilinear relationship between Extraversion (β = -.39, p <.10) and taskwork SMM. That is, teams with moderate Extraversion mean were more likely have more taskwork SMM than teams with greater or lesser Extraversion mean.

Table 8. Hierarchical Regression analyses for Extraversion in Predicting the three SMM measures

Variables	Team-work SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 3			.21	1.43	.02
Team Tenure	-.03	-.16			
Team Size	-.48**	-2.14			
Linear	-.06	-.25			
Quadratic	-.15	-.74			
	Task-work SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 3			.18	1.18	.14
Team Tenure	-.12	-.60			
Team Size	-.33	-1.43			
Linear	-.18	-.80			
Quadratic	-.39*	-1.91			
	Explicit SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 3			.34	2.78*	.02
Team Tenure	-.48**	-2.68			
Team Size	-.23	-1.14			
Linear	-.17	-.81			
Quadratic	.15	.82			

Note. * p < .10, **p < .05, ***p < .01, SMM. Shared mental model.

Moreover, Hypothesis 2b proposed positive relationship between Extraversion facet of Warmth and the three measures of SMM. Parallel with

relationship exhibited by Extraversion factor, team mean Warmth entered explained incremental variance only for explicit measure of SMM, $\Delta R^2 = .01$, $F_{(3,23\ )}=3.18$, $p \leq .05$. In Table 9, it was shown that Warmth exhibited nonsignificant relationship with team-work SMM (β = .04, *ns*), task-work SMM (β = .15, *ns*) and with explicit SMM (β = -.10, *ns*), refuting Hypothesis 2b.

Table 9. Hierarchical Regression analyses for Warmth in Predicting the three SMM measures

Variables	Team-work SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 1			.19	2.75*	
Team Tenure	.00	.02			
Team Size	-.43**	-2.35			
Step 2			.19	1.77	.00
Team Tenure	.00	.01			
Team Size	-.42**	-2.11			
Warmth	.04	.18			
	Task-work SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 1			.03	.43	
Team Tenure	-.03	-.12			
Team Size	-.18	-.98			
Step 2			.06	.45	.02
Team Tenure	-.01	-.06			
Team Size	-.23	-1.09			
Warmth	.15	-.71			
	Explicit Measure of SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 1			.28	4.74**	
Team Tenure	-.50***	-2.91			
Team Size	-.17	-1.01			
Step 2			.29	3.18**	.01
Team Tenure	-.50***	-2.86			
Team Size	-.20	-1.09			
Warmth	-.10	-.57			

Note. * $p <. 10$; ** $p < .05$; *** $p <. 01$. SMM. Shared mental model.

In response to this unexpected finding concerning the antecedent role of Warmth, a decision was made to test the relationship of warmth heterogeneity (variance) with the SMM measures. As shown in Table 10, team heterogeneity on

Warmth explained incremental variance in the explicit SMM, $\Delta R2$ = .13, $F_{(3,23)}$=5.45 , $p \leq$ .01 and teamwork SMM, ΔR^2 = .13, $F_{(3,23)}$=3.29 , $p \leq$ .05. However, examinations of regression coefficients showed that team composition in terms of personality factor of Warmth variance was negatively related to exhibited team-work SMM similarity (β =-.35, $p \leq$ .10), task-work SMM (β =-.36, $p \leq$ .10), and the explicit SMM (β = -.37, $p \leq$ .05). So, as dissimilarity in level of Warmth among team member increased, similarity of team members' mental models was likely to decrease.

Table 10. Hierarchical Regression analyses for Warmth Variance in Predicting the three SMM measures

Variables	Team-work SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 1			.19	2.75*	
Team Tenure	.00	.02			
Team Size	-.43**	-2.35			
Step 2			.30	3.29**	.11
Team Tenure	-.05	-.30			
Team Size	-.38**	-2.18			
Warmth	-.35*	-1.94			
	Task-work SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 1			.03	.43	
Team Tenure	-.03	-.12			
Team Size	-.18	-.92			
Step 2			.16	1.47	.13
Team Tenure	-.08	-.44			
Team Size	-.13	-.69			
Warmth	-.36*	-1.86			
	Explicit SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 1			28	4.74**	
Team Tenure	-.50***	-2.91			
Team Size	-.17	-1.01			
Step 2			.42	5.45***	.13
Team Tenure	-.56***	-3.47			
Team Size	-.12	-.76			
Warmth	-.37**	-2.28			

Note. * $p < .10$, ** $p < .05$,*** $p < .01$, SMM. Shared mental model.

Hypothesis 3a and 3b proposed that team composition in terms of mean Conscientiousness and its facet Achievement Striving would be positively related to both implicit and explicit measures of SMM. As shown in Table 11, Hypothesis 3a was not supported as Conscientiousness exhibited non significant relationship with teamwork SMM (β =.10, *ns*), taskwork SMM (β = .32, *p* =.12) and the explicit SMM (β = .19, *ns*).

Table 11. Hirarchical Regression analyses for Conscientiousnessin Predicing the three SMM measures

Variables	Team-work SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 1			.19	2.75*	
Team Tenure	.00	.02			
Team Size	-.43**	-2.35			
Step 2			.20	1.87	.01
Team Tenure	-.00	-.01			
Team Size	-.44**	-2.36			
Conscientiousness	.10	.51			
	Task-work SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 1			.03	.43	
Team Tenure	-.03	-.12			
Team Size	-.18	-.92			
Step 2			.13	1.19	.10
Team Tenure	-.06	-.23			
Team Size	-.22	-1.15			
Conscientiousness	.32	1.63			
	Explicit SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 1			.28	4.74**	
Team Tenure	-.50***	-2.91			
Team Size	-.17	.1.01			
Step 2			.32	3.57**	.03
Team Tenure	-.51***	-2.98			
Team Size	-.20	-1.14			
Conscientiousness	.19	1.08			

Note. * $p < .10$, ** $p < .05$, *** $p < .01$, SMM. shared mental model.

Regarding team composition in terms of personality facet of Achievement Striving, as shown in Table 12, second step explained incremental variance for only criterion of taskwork SMM, ΔR^2 = .12, $F_{(3,23\ )}$=1.35 , $p \leq$ .10. Thus, team mean achievement striving was only positively related to task-work SMM (β = .35, $p \leq$ .10), and Hypothesis 3b was not supported for team-work SMM (β = .25, *ns*) and the explicit SMM (β = .10, *ns*).

Table 12. Hirarchical Regression analyses for Achievement Striving in Predicing the three SMM measures

Variables	Teamwork SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 1			.19	2.75*	
Team Tenure	.00	.02			
Team Size	-.43**	-2.35			
Step 2			.25	2.50*	.06
Team Tenure	.05	.25			
Team Size	-.39**	-2.09			
Achievement Striving	.25	1.35			
	Taskwork SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 1			.03	.43	
Team Tenure	-.03	-.12			
Team Size	-.18	-.92			
Step 2			.15	1.35*	.12
Team Tenure	.03	.17			
Team Size	-.12	-.61			
Achievement Striving	.35*	1.77			
	Explicit SMM				
	β	*t*	R^2	*F*	ΔR^2
Step 1			.28	4.74**	
Team Tenure	-.50***	-2.91			
Team Size	-.17	-1.01			
Step 2			.29	3.17	.01
Team Tenure	-.49**	-2.73			
Team Size	-.16	-.87			
Achievement Striving	.10	.56			

Note. * $p < .10$, ** $p < .05$, *** $p <. 01$, SMM. Shared mental model.

3.6 Hypothesis Testing Concerning Consequences of SMM

Regarding consequences of SMM Similarity, a number of hierarchical regression analyses predicting three team effectiveness outcomes (i.e., team performance, viability, and potency) were run. In prediction of team performance, team size and team tenure was controlled. In line with the work of Resick et al. (2010), only team tenure was controlled in prediction of team viability and potency. Hypothesis 4 proposed that task work SMM would be positively related to team performance. Team size and team average tenure were controlled in the first step of analysis. As shown in Table 13, team average tenure (β = -.04, *ns*) and team size (β = -.13, *ns*) exhibited nonsginificant relationship with team performance. Taskwork SMM was found to be negatively related to team performance (β = -.34, $p \leq .10$), meaning as the team members implicit SMM concerning the team's tasks increased, team performance was likely to decrease. Hence Hypothesis 4 was not supported.

Table 13. Hirarchical Regression analyses for the Taskwork SMM in Predicting Team Performance

Variables	β	*t*	R^2	*F*	ΔR^2
Step 1			.02	.23	
Team Tenure	-.04	-.22			
Team Size	-.13	-.65			
Step 2			.13	1.14	.11
Team Tenure	-.05	-.27			
Team Size	-.19	-.97			
Taskwork SMM	-.34*	-1.71			

Note. * $p < .10$, ** $p < .05$, *** $p < .01$, SMM. shared mental model.

Hypothesis 5 proposed a positive relationship between team viability and the three measures of SMM. As shown in Table 14, after controlling average team tenure, teamwork SMM (β = .38, $p \leq .10$), taskwork SMM (β = .39, $p \leq .05$), and explicit SMM (β = .63, $p \leq .01$) were found to be positively related to team viability, supporting Hypothesis 5.

Table 14. Hirarchical Regression analyses for the three measures of SMM in redicing Team Viability

Variables	β	*T*	R^2	*F*	$\Delta R2$
Step 1			.00	.06	
Team Tenure	.05	.24			
Step 2			.15	2.08	.15
Team Tenure	.05	.25			
Teamwork SMM	.38*	2.02			
Step 1			.00	.06	
Team Tenure	.05	.24			
Step 2			.16	2.23	.15
Team Tenure	.06	.31			
Taskwork SMM	.39**	2.10			
Step 1			.00	.06	
Team Tenure	.05	.24			
Step 2			.30	5.12	.30
Team Tenure	.37	1.85			
Explcit SMM	.63***	3.19			

Note. * $p < .10$, ** $p < .05$, *** $p < .01$, SMM. shared mental model.

Finally, with respect to team potency, Hypothesis 6 proposed that the three SMM measures would be positively related to team potency. As shown in Table 15, team tenure entered in step 1 was found to be unrelated with team potency (β = .08, *ns*). The examination of the regression coefficients indicated that teamwork SMM (β = .33, $p \leq .10$) and the explicit SMM (β = .73, $p \leq .01$) were positively related to team potency; however taskwork SMM was found be unrelated (β = .32, *ns*). Hence, results partially supported Hypothesis 6.

Table 15. Hirarchical Regression analyses for the three measures of SMM in p redicing Team Potency

Variables	β	*T*	R^2	*F*	Δ*R2*
Step 1			.01	.15	
Team Tenure	.08	.39			
Step 2			.12	1.53	.11
Team Tenure	.08	.40			
Teamwork SMM	.33*	1.71			
Step 1			.01	.15	
Team Tenure	.08	,39			
Step 2			.11	1.48	.10
Team Tenure	.09	.45			
Taskwork SMM	.32	1.67			
Step 1			.01	.15	
Team Tenure	.08	.39			
Step 2			.41	8.30	.40
Team Tenure	.45**	2.46			
Explcit SMM	.73***	4.04			

Note. * $p < .10$, ** $p < .05$, *** $p < .01$, SMM. shared mental model.

CHAPTER 4

DISCUSSION

4.1 Overview

Although the number of team based organizations is increasing, relatively little is known about how team composition influences team processes and outcomes. However, with the increased interest in antecedents and consequences of team mental models (i.e., SMM), an apparent picture supporting importance of team composition in the development of mental models is slowly emerging (Edward et al., 2006; Resick et al., 2010; Yang et al., 2008). In this regard, the present study provided an empirical extension of the previous research on antecedents and consequences of SMM. In doing so, I had four objectives. First I aimed to examine the emergence of SMM in a naturalistic setting using real life teams in a technology retailer chain. Second, I aimed to understand the development of SMM in service teams as opposed to other types of teams. Third, I aimed to distinguish two types of SMM measurement techniques (i.e., implicit and explicit measure of SMM). Lastly, I aimed to examine team personality composition as antecedents of SMM, and team effectiveness facets (i.e., team performance, viability and potency) as consequences of SMM.

This chapter has four sections. In the first section, the results of hypotheses testing, that are findings concerning antecedents and consequence of SMM, are discussed. The second section focuses on the contributions and practical implications of the present study. In the last section, present study's limitations and suggestions for future research are presented.

Since each type of team requires different demands and operates differently from each other due to heterogeneity within and across team types (Mathieu et al., 2008), type of team under examination, team task, and team structure (i.e., service team) should be taken into consideration in the discussion of the present study

findings. In this regard, to interpret the findings, understanding nature of sale teams is important. The teams in the present sample work under a well-established GSM organization and are subject to practices and policies of the organization: Each team member strives to achieve both individual sale goal/objective set for him/her by the store manager and team goal set by the regional sales manager of the GSM organization. To complete individual sale transactions, each team member receives and shares information; works cooperatively with other team members, and team members encourage each other to achieve team sale goal. Based on the tasks requiring interdependency and cooperation, it is very clear that team members not only get involved in dyadic customer interaction but also in intrateam interaction on a continuous basis. Moreover, 89.1 % of the team members believed that they were working as a team.

4.2 Discussion of the Results

The study results are discussed through three subsections. Firstly, discussion of the results concerning antecedents of SMM is presented. Then results concerning consequences of SMM are discussed. Lastly, discussion of results regarding differential relationship exhibited by implicit and explicit measures of SMM are presented.

4.2.1 Discussion of Results Concerning Antecedents of SMM

With respect to antecedents of SMM, Hypothesis 1a, which stated that team mean Agreableness would be positively related to SMM was partially supported and within team mean level Agreeableness was found to be positively related to teamwork SMM and taskwork SMM. That is, teams composed of highly agreeable members were more likely than others to have shared mental models of teamwork and taskwork. This finding is consistent with previous studies (Fisher, Bell, Dierdorff, & Belohlav, 2012; Resick et al., 2010; Yang et al., 2008) which reported a positive relationship between Agreeableness and SMM. The contribution of agreeable member in the emergence of SMM is not so surprising as agreeable people are likely to engage in teamwork tasks involving cooperation and requiring interpersonal interactions (LePine & Van Dyne, 2001), and agreeable members work

well with others (Mount et al., 1998). Taken together, findings of the present study supported the importance of agreeable members in teams in the development of SMM.

Among facets of Agreeableness, Cooperation and Trust were regarded as most relevant to team interaction (Driskell et al., 2006). These two facets were expected to be facilitator of the supported positive relationship between Agreableness and SMM. Hence, Hypothesis 1b and Hypothesis 1c proposed positive relationships between these two facets and SMM in a service team context. With respect to Cooperation, team mean level cooperation exhibited positive relationship with teamwork and taskwork SMMs, suggesting that the more cooperative members a team had, the more likely they were to have shared mental models of teamwork and taskwork. It seems like, cooperative individual give more importance to group demands than individual desires (Wagner, 1995) that direct the individual's attention to the group or team. Cooperative team members seem more likely to display positive interpersonal interaction and engage in collaborations that facilitate emergence of SMM.

On the other hand, with respect to Trust, within team mean Trust failed to exhibit the expected positive relationship. Hence, Hypothesis 1b was not supported in the present study. Contrary to the expectations, Trust had nonsignificant negative relationship with the three measures of SMM (i.e., taskwork SMM, teamwork SMM, and explicit measure of SMM) with noticeable beta coefficients. These findings are consistent with the work of Fisher and colleagues (2012) that examined agreeableness facets of trust and cooperation as deep level antecedents of team-focused team mental model (TMM) similarity. While these authors found the expected positive relationship between cooperation and team-focused TMM similarity, in their study also trust exhibited a negative relationship with team-focused TMM similarity in a student sample performing a business simulation.

The negative relationship exhibited by Trust might be explained by the potential negative outcomes of having highly trustful members in teams. Despite commonly proposed benefits of trust for individuals and organizations, Langfred (2004) emphasized the potential negative outcomes of high trust among team

members. The author reported that high trust among team members resulted in low monitoring behavior among team members that could harm performance when combined with high individual autonomy.

Another plausible explanation regarding this unexpected finding may be related to the way team level trust was operationalized in the present study. Intuitively, people continue to show trust until others show trust reciprocally. In an environment some team members may be trustful, whereas other may not. In such an environment, positive outcome like cooperation and team harmony might not be observed. Hence, diversity (high variance) in team composition in terms of Trust may be critical factor here. Thus, as explained in the results chapter, on an exploratory basis, a decision was made to examine the effects of within team Trust variance on SMM with the hope of shedding some lights on this unexpected negative relationship. It was found that there was negative relationship between team heterogeneity on trust and the explicit measure of SMM. That is, when team members were diverse in terms of level of Trust felt, they were more likely to have dissimilar mental models. These findings showed that the similarity of team members in trust level is critical rather than the mean trust level in the emergence of shared mental models.

Concerning the role of team extraversion composition, negative relationship between team mean Extraversion and three measures of SMM were hypothesized (Hypothesis 2a). However, the expected relationship was not supported. The interaction of individual extraversion and team extraversion composition might explain this finding. For example, research evidence indicated that extraverts show more counterproductive behavior when they are member of a group which have more extraverts compared to groups with fewer extraverts (Schmidt, Ogunfowara, & Bourdage, 2012). In addition, Kristof-Brown and colleagues (2005) reported that unlike the commonly hold view of the importance of similarity of extraversion among team members for team outcomes, complementary fit (i.e., high individual, low team or low individual, high team) of team composition in terms of extraversion produced high attraction to team. The exploratory finding on the existence of a curvilinear relationship between Extraversion and taskwork SMM supported

criticality of modarete degree of Extraversion in the development of SMM as teams with moderate Extraversion mean were more likely have more taskwork SMM than teams with greater or lesser Extraversion mean.

Among the facets of extraversion, Warmth was hypothesized as positively related to SMM (Hypothesis 2b). However, the expected relationship was not supported. Like the Trust facet of Agreeableness, maintenance of warmth among team members may require also reciprocal feelings. Thus, this type of personality facet might be expected to be shown by all team members to facilitate SMM emergence. Thus, dissimilarity in warmth level among members could be more likely to result in dissimilar mental models. The exploratory analysis of team heterogeneity on warmth supported this possibility. That is, it was found that team variance of warmth was negatively related to taskwork SMM and explicit measure of SMM. Taken together, the finding suggested that similarity rather than mean level in Warmth seemed to be influential in the enhancement of SMM.

Although highly conscientiousness people are more likely to cooperate with others when the work is contingent on interdependence and gentle interpersonal relationships (Lepine & Van Dyne, 2001), surprisingly team mean level conscientiousness failed to contribute to any of the SMM variables. Hence, Hypothesis 3a was not supported. A plausible explanation for this unexpected relationship may be related to the differential associations of different components/facets of Conscientiousness to SMM. Lepine and Van Dyne (2001) examined the relationship between Conscientiousness and cooperative behavior both at factor and facet (i.e., Competence, Order, Dutifulness, Achievement Striving, Self-discipline, Deliberation) level. At factor level, they found a positive relationship between Conscientiousness and cooperative behavior, however, this relationship was supported for only facets of Competence, Achievement Striving, and Self-Discipline, which reflect the *motivational* aspect of Conscientiousness. On this finding, they noted that cooperation was not higher for people who are carry out their job in an orderly, methodical and deliberate fashion which reflects the *dependability* aspect of Conscientiousness. On comparison of achievement and dependability, Hough (1992) demonstrated that although both dependability and achievement facets

correlated with teamwork, they were found to be differently related with criteria (i.e., overall performance, sale effectiveness, and creativity). Whereas dependability was negatively related to creativity, achievement was positively related to creativity. In addition, overall performance indices, sale effectiveness and effort, were better predicted by the achievement facet. This diverse nature of major facets of Conscientiousness may explain why at the factor level Concientiosness was not related to SMM in the present study.

Concerning facets of Conscientiousness, a positive relationship was hypothesized between Achievement Striving and the three measures of SMM (Hypothesis 3b). However the hypothesis was supported for only taskwork SMM. This finding provides support for the argument of Resick and colleagues (2010) who asserted that while Achievement facet promotes mental model emergence, Dutifulness facet may detract mental model emergence. Obtaining supportive findings for only the task-work SMM is not so surprising since the achievement oriented individual primarily concentrate on task (Hough, 1992) and the goal accomplishment. High involvement of team members in task components and completion is more likely to facilitate the development of taskwork SMM rather than teamwork SMM.

The present study did not propose any hypotheses regarding the other two broad personality traits (i.e, Neuroticism and Openness to Experience). However, for exploratory purposes, whether team composition in terms of Neuroticism and Openness to Experience were related to SMM was also examined. However, both of the traits failed to exhibit significant relationship with the three measures of SMM.

To summarize, team mean level Agreeableness, Cooperation, and Achievement Striving as well as team homogeneity in Trust and Warmth were found to be significant predictors of SMM development. That is, teams composed of members with high level Agreeableness, Cooperation, and Achievement Striving, and similar level of Trust and Warmth were more likely than others to share mental models. Given the significance of early team interaction in the development of team mental models (Fisher et al., 2012), the present findings showed that those

personality attributes (e.g., agreeableness, trust, cooperation) facilitating interpersonal interaction create an environment fostering emergence of SMM.

4.2.2 Discussion of Results Concerning Consequences of SMM

The findings of the present study provided evidence that taskwork SMM and teamwork SMM were differentially related with different aspect of team effectiveness. The existing research on team mental models provides evidence that supports the importance of SMM in team processes and effectiveness. Specifically, teams sharing similar mental models were found to communicate effectively, show more core teamwork behavior, coordination, and back up behavior (e.g., Marks et al., 2001; Mathiue et al., 2000; Rentsch & Klimoski, 2001) and better performance (e.g., Edwards et al., 2006; Guchait & Hamilton, 2013; Lim & Klein, 2006; Resick et al., 2010).

With respect to consequences of SMM, taskwork SMM was hypothesized to be positively related with team performance (Hypothesis 4). But, the expected positive relationship was not found. Unexpectedly, a negative relationship was found between these two variables. The differences in team tasks and the study setting (laboratory versus field) may be responsible for the differences in present study and previously reported work (e.g., Edwards et al., 2006; Resick et al., 2010). Previous studies provided supportive finding for the influence of SMM on team performance in controlled settings in which participants were required to engage in a simulated task, and were exposed to stress and time pressure, which perhaps enhanced the need for SMM for effective task accomplishment (Lim & Klein, 2006). However, with respect to teams in the present study, members of the teams were expected to make successful sales in collaboration with one another. In other words, team members were expected to communicate, encourage and support each other. In such a context, team performance may be better predicted by cooperation, coordination, and goal accomplishment rather than SMM. On the other hand, it seems that content of SMM could also have contributed to the present study findings. That is, in the present study, the common tasks (e.g., *draw up documents*, *promote products*, and *monitoring transaction)* the team members are responsible for were treated as contents of SMM. The shared understanding of the relatedness of these concepts was

expected to be linked to team performance. However, there may be other potential contents of SMM that may be critical in team performance. For instance, mental models contents such as customers' demands and effective ways to meet these demands (Lim & Klein, 2006) might be more critical and similarity of these mental models might be more related to team performance. Moreover, shared perception of individual performance indispensability for collective performance might make more contributions to team performance than the taskwork SMM for teams responsible for additive tasks (sum of individual contributions). Future research is definitely needed to look into these possibilities.

The unexpected negative relationship between taskwork SMM and team performance might be attributed to differential relationship exhibited by two facets of team mental models as mental model similarity and mental model accuracy. The main focus of the present study was on mental model similarity. It is quite plausible that although similar, mental models of the teams may be inaccurate which might result in decrease in team performance. Previous research focusing on both facets found that though mental model similarity and accuracy were related (e.g., Lim & Klein, 2006), mental model accuracy (quality) had the strongest impact on team effectiveness components such as performance, decision effectiveness, and adaptation (e.g., Edwards et al., 2006; Resick et al., 2010). Moreover, while mental model accuracy was positively related to goal accomplishment and coordination processes, mental model similarity was only related to team viability (Resick et al., 2010). Taken together, it seems that accuracy, but not similarity, of mental models could matter in enhancing task performance. However, assessment of similarity and accuracy in service team context will enable us to compare and contrast the outcomes of these shared mental models (i.e. accuracy & similarity) with respect to different outcomes.

Additional plausible explanation for this unexpected finding might be existence of potential mediators or moderators of this relationship. In line with the input-process-output framework, SMM was reported to initially influence team commitment and then slowly influence team effectiveness components (i.e., performance) (Yang et al., 2008). In addition, relationship between SMM and team

performance was fully mediated by the process of coordination (Marks et al., 2002). It should be taken into consideration that tasks of service teams require goal commitment that has influence on team performance, quality of group experience and team viability (Aubé & Rousseau, 2005). Based on the reported evidence that some team processes fully or partially mediate the relationship between SMM and team performance, processes variables such as communication, goal commitment and back up behavior need further investigation.

Finally, another plausible explanation for not finding an effect of SMM on team performance of these teams may be that performance, especially sales performance, is a function of factors that are sometimes beyond the characteristics or attributes of teams and individual that make up these teams, like supervisory factors, such as outcome based control, internal marketing of new products (Hultink & Atuahene-Gima, 2000)

With respect to consequences of SMM, Hypothesis 5 which proposed a positive relationship between three measures of SMM and team viability was supported. Team viability, "the team's capacity for the sustainability and growth required for success in future performance episodes'' (Bell & Marentette, 2011, p. 279) has been regarded as one critical measure of team effectiveness (Kozlowski & Ilgen, 2006). Team viability involves both the satisfaction of teammates with their membership and their behavioral intent to continue working with their team (Barrick et al., 1998). The present study findings regarding team viability extend the work of Resick et al. (2010) that observed positive relationship of task-focused mental model similarity in ad hoc teams by additional examination of the relationship of teamwork SMM and explicit measure of SMM with team viability. It appeared that teams with a common understanding of task and team components perceive greater viability for their present team.

Concerning final consequence of SMM, it was found that teams with higher SMM had higher team potency perception (Hypothesis 6). Team potency is the shared belief about team competency. The importance of team potency in teams has been reported in a number of studies (e.g., Gully et al., 2002; Hecht, Allen, Klammer, & Kelly, 2002; Pearce, Gallagher, & Ensley, 2002). Similarity among

team member's mental models allows team members to predict the behavior of teammates which in turn enable to use individual inputs more efficiently and effectively (Klimoski & Mohammed, 1994). The sharedness of mental models also facilitates the development of perception that the team has potency and competency.

To summarize, both implicit and explicit SMM seem to be important for the development of perceptions of team viability and team potency. However, unexpected negative relationship between taskwork SMM and team performance suggests that complete similarity among team member's mental models may be dysfunctional to increase team sale performance. Yet, as discussed above, plausible explanations need to be investigated before making firm conclusions concerning the SMM-team performance relationship.

4.2.3 Discussion of Results Concerning Differential Relationship Exhibited by Implicit and Explicit Measures of SMM

The present study found that implicit (i.e., taskwork SMM and teamwork SMM) and explicit (i.e., TADI) measures of SMM were differently related to antecedents and consequences of SMM. This finding is consistent with the findings of DeChurch and Mesner-Magnus's meta analysis (2010) and the work of Resick et al. (2010). DeChurch and Mesner-Magnus (2010) observed that different measurement methods (i.e., concept map, similarity ratings, card sorting tasks, consistency metric, traditional rating scale format) of SMM differently predict team processes and performance. They argued that both relatedness ratings (i.e., implicit) and traditional rating formats elicit content of mental models, however, knowledge structures are represented by only relatedness ratings. In the meta analysis, strongest relationship between SMM and team processes was found when relatedness ratings were used. However, no significant relationship was found with team processes by using traditional scale rating format. Unlike team processes, to predict team performance, even traditional scale format, representing mental model content, was found to be influential. Taken together, while mental model content predicts only team performance, knowledge structure of mental model predicts both team processes and performance. Besides, Resick et al. (2010) examined the convergent, discriminant, and predictive validity of three SMM measurement metrics (i.e.,

structural networks, priority rankings, and importance ratings). They provided evidence that different metrics of SMM models represent different construct and mental models were best operationalized with structural network metrics (i.e. pathfinder).

In explaining differential relationship exhibited by implicit and explicit measures in the present study, what aspect of mental model is elicited appeared to be instructive. Concerning implicit measures of SMM, hypotheses related to team mean level personality traits (i.e. Agreeableness) and facets (i.e., Trust, Cooperation, and Achievement Striving) was not supported when an explicit measure of SMM (i.e., TADI) was used. This may suggest that personality traits of Agreeableness, Cooperation and Achievement Striving are positively related to structure similarities of mental models rather than content similarity of mental models. Considering testing team heterogeneity on Trust and Warmth, both implicit measures and explicit measures exhibited similar negative relationships. This finding suggests that homogeneity in Trust and Warmth facets are related to both structure and content similarity of mental models.

With respect to consequences of SMM (i.e., team viability and team potency), positive relationships were found both for implicit and explicit measures but larger beta values were observed for the explicit measure. This pattern of relationship might be partially attributed to common method bias as team viability and potency measures as well as the explicit measure of SMM (i.e., TADI) were assessed using self report ratings.

To summarize, discussion of the findings on different measurement methods SMM showed that implicit and explcit methods more likely capture different aspect of SMM.

4.3 Contributions and Practical Implications of the Study

The present study is believed to make contributions to the SMM and the team literature in several ways. First, the present study examined team personality composition as the antecedents of SMM. Team personality composition was described as a source shaping both teamwork processes and outputs (Bell, 2007). A

team's personality composition is expected to distinctively shape team processes and outcomes (Schmidt et al., 2012). Studies on team composition provided supportive findings for this proposition (e.g., Bell, 2007; Neuman & Wright, 1999). In this regard, the present study results demonstrated how team composition of member personality influence team level construct of SMM.

Second, the present study also makes contribution to the relevant literature by providing evidence on the importance of facet level trait examination. Especially, the nature of the relationship exhibited by facets and traits highlight the necessity to consider facet level examination. Besides, present findings indicated the differential value of examining team mean level of an attribute versus within team variance of an attribute in predicting SMM. That is, each composition method (i.e., mean or variance) seems to capture distinct team characteristic. Hence, the present study contributes to the respective literature by demonstrating the criticality of team operationalization methods (e.g., mean, variance, minimum) for aggregating personality traits to the team level.

Another contribution of the present study is related to the context in which the study was conducted. Use of real life sales teams in the technology retail sector is an important strength of the present study contributing to the external validity of the inferences to be made from this study. In a meta-analysis on the relationship between personality and team effectiveness, Bell (2007) indicated that more strong relationship were found in studies conducted in fields than laboratories. In highly controlled lab settings where individual participants are expected to assume the role of a team member in a simulated task situation, it is always a question whether participants can truly feel like the member of the team.

Although, it is not free from the problems of most objective indices of performance, the performance measure employed is another strength or contribution of the present study. The GSM organization's performance assessment technique enabled me to directly compare performance of teams operating at different locations and having diverse customer characteristics. Hence, pre-set team sale goals/objectives represented a decent index of true performance of teams involved. The present study also contributes to the literature by providing evidence that SMM

was differently related to team effectiveness components. Although SMM was found to be influential for team viability and potency, it was negatively related to team performance in service team context that requires both dyadic customer and intrateam interaction. This finding challenges the SMM literature to further investigate the differential mechanism of SMM in different contexts, such as action versus service teams.

Another strength of the present study is the inclusion of two different types of SMM measurement technique as implicit (relatedness ratings) and explicit (traditional scale format, TADM) in testing antecedents and consequences of SMM. Examination of SMM with multiple operationalizations has been recommended by other researchers (e.g., DeChurch & Mesner-Magnus, 2010; Resick et al. 2010). The present study highlights the importance of use of different operationalizations of SMM by providing evidence on the differential relationship exhibited by each measure.

With respect to implications, the study findings have important practical implications for team management practices. Increase in team-based work structures have changed the requirement of both selection and training requirements and created interests in identification of the cognitive underpinnings of teamwork effectiveness (Smith-Jentsch et al., 2001). Organizations have to endeavor to find best team composition in terms of team members' knowledge, skills abilities and personality traits in addition to finding the best person for the job (Mohammed & Angell, 2003). In this regard, human resource practitioners should take into account characteristics influential in team effectiveness. The literature on SMM and the present study findings provided evidence on how individual characteristics of team members influences intragroup processes and team outputs (i.e., productivity, team viability). As one of these characteristics, personality can be used as a major criterion to facilitate development of SMM among team members.

The present study findings highlighted the importance of agreeable, cooperative, achievement striver team members in the development of SMM. Moreover, the importance of homogeneity in Warmth and Trust is suggested by the present study finding. Awareness of these critical personality traits facilitating

emergence of SMM can contribute to the effectiveness of human resource management practices such as personnel selection. Selection and recruitment practices may target identification of future team members similar in perceptions, traits and attitudes. In this regard, organizations may seek agreeable, cooperative, achievement striver, warm and trustful applicants via personnel recruitment and selection practices.

Concerning positive relationship of SMM with team viability and potency, team management staff may develop management activities that encourage intrateam interaction and communication facilitating enhancement of mental model similarity among team members. In doing so, human resource specialist might design training programs that would facilitate enhancement of SMM among team members. For instance, team interaction training (Marks et al., 2000) and cross training (Marks et al., 2002) are among the programs previously reported as positively related to TMM similarity. Additionally, organization-specific team development training programs may be developed and applied.

4.4 Limitations and Future Research Suggestions

The present study has several limitations that should be acknowledged in interpretation of the study findings. First, the present study has a relatively small sample size like the majority of field studies. Although there were 128 individual team members, the sample size was reduced to 27 at the team level. In the regression analyses, the present study had adequate sample size only for large effects, .35. Furthermore, exclusion of newly hired employee/team member was a factor decreasing the sample size for individual level analyses.

Second, common method bias was a potential problem in the measurement of personality, team potency, team viability, and the explicit measure of SMM. The data of these measures were collected via self report. This bias was somewhat reduced in testing hypotheses related to team outcomes as objectively measured and implicit measures of SMM were used. In addition, the results are correlational in nature and should be interpreted with caution. Also, it is important to note that, there were

relatively small variances in personality variables which may have resulted in attenuation of the observed correlations.

Last, there was some confusion among participants regarding how they would respond to the implicit mental model measure. Even after revising the original matrix format, some participants still seemed to have difficulty in following the instructions.

The present study findings suggest a number of future research directions. One direction for future research is the examination of the mechanism of how team personality composition influence team cognition. Specifically, the role of team personality composition in different phases of team formation should be longitudinally examined. In this regard, additional deep level and surface level composition variables like team affect and mood as antecedents of SMM can be empirically examined. In addition, to comprehensively understand the mechanism of SMM in work teams, team inputs such as interdependence, virtuality, training, leadership (Kozlowski & Ilgen, 2006), and team structure should also be included in future research. As studies on role of trust provided interesting findings, in further research, factors influencing interpersonal trust such as team member's social interaction and team member's attitude toward work (Ding, NG, & Cai, 2007) should also be included among the antecedents of SMM. Additionally, as dense social networks have substantial effects on team performance and viability compared to sparse social networks (Balkundi & Harrison, 2006), the role of social networks in context of SMM development might be explored.

Another direction for future research is the examinations of antecedents and consequences of mental model similarity and accuracy separately in service teams. Although some researchers found these to facets of SMM as related, they have diverse influence on team outputs, suggesting a need for separate examination. Besides, the present study only focused on four personality facets; however, it is certainly plausible that other facets might have unique relationship with SMM emergence and need to be researched. Most importantly, literature of SMM have dearth of studies conducted in different teams like production and service teams. Thus, future research should be carried out with other types of teams.

Last direction for further research is the need for multilevel analysis in examination of SMM construct. As SMM is multilevel in nature, it is influenced by both individual level characteristic (i.e., personality, cognitive ability) and management practices (i.e., leadership, training). Moreover, data aggregation of individual scores to team level score may result in missing information in individual level. Therefore, SMM construct should be analyzed with multilevel methods in future research.

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APPENDIX A: Task Statements of the Cashier Position

1. Mesai başlangıcında kasayı açıp paraları saymak.
2. Gün içinde kasa giriş çıkışları kayıt etmek.
3. Gün içinde kontör alımı için bankaya para yatırmak.
4. Gün sonu kasayı saymak ve kapatmak.
5. Mağazaya gelen müşterileri güler yüzle karşılamak.
6. Müşterinin mağazaya geliş sebebini sormak.
7. Müşteri talebine yönelik doğru yönlendirmeyi yapmak (Yüksek fatura şikayeti ile gelen müşteriyi iletişim danışmanına yönlendirmek)
8. Fatura ödemesi için gelen müşterinin telefon numarasını sormak ve fatura bedelini nakit ya da kredi kartı ile tahsil etmek
9. Kontör yüklemek için gelen müşterilerin telefon numarasını sormak ve fatura bedelini nakit ya da kredi kartı ile tahsil etmek
10. Teknik servis kaydı almak ve servise giden ürünleri takip etmek.
11. Kontör yüklemeye gelen müşterilere faturalı hatta geçmelerine yönelik öneri sunmak
12. Yüksek faturası olduğunu düşündükleri müşterilere farklı alternatif kampanyalar sunmak (Ör. Akıllı telefon almak isteyen fakat bu telefonun bedeli altında fiyat aralığı olan müşterilere faturalı hat üzerinde her ay faturaya ek ücret karşılığı telefon satışı yapmak
13. Müşteriye bir üründe ne tür özellikler aradığını ve fiyat aralığının ne olduğunu sormak.
14. Müşterinin aradığı özelliklere uygun ürünleri müşteriye sunmak.
15. Müşteriyi ürünün özelliklerine yönelik ayrıntılı bilgilendirmek (ör. telefonun işlemcisi, işletim hızı, konuşma süresi, kamera özellikleri)
16. Satış işlemi sırasında eğer müşterinin daha önce satın almış olduğu hizmete yönelik şikayeti var ise sorunu çözmek.
17. Sorunun çözümüne yönelik iletişim danışmanından destek almak ve müşteriyi durumla ilgili doğru bilgilendirmek.
18. Ürün satış bedeline ve ödeme seçeneklerine yönelik güncel bilgiyi iletişim danışmanından talep etmek

19. Müşteriyi satış bedeline ve ödeme seçeneklerine yönelik bilgilendirmek.

20. Ürün satışı ile ilgili müşteri ile uzlaşma sağmak.

21. Aktivasyon gerektiren satışlarda (hat)müşteriden işleminin tamamlanması için gerekli olan evrakları (ikametgah belgesi, nüfus cüzdanı fotokopisi, sabit evrak) talep etmek.

22. Satış işleminin tamamlanması için gerekli olan satış sözleşmesini müşterinin sunduğu bilgilere göre düzenlemek.

23. Satış sözleşmesini müşteriye imzalatmak.

24. Düzenlenen ve talep edilen evraklarla birlikte müşteriyi iletişim danışmanına yönlendirmek.

25. İletişim danışmanında işlemleri tamamlanan müşteriye ödeme için kasaya getirmek.

26. Telefon satışlarına ek olarak müşteriye aksesuar önermek.

27. Alınan aksesuarları telefonlara takmak ve gereken durumlarda yeni alınmış ürüne yönelik işlemleri yürütmek (numaraları eski telefondan yeni telefona aktarmak, Sim kart kesme)

28. İşlem sonrasında müşteriyi güler yüzle uğurlamak

29. İşlem sonrasında müşteri ile irtibat gerektiren durumlarda (eksik evrak) müşteri ile telefonla iletişime geçmek ve sorunu çözmek.

APPENDIX B: Task Statements of the Sale Advisor Position

1. Mağazaya gelen müşterileri güler yüzle karşılamak.
2. Müşterinin mağazaya geliş sebebi sormak.
3. Geliş sebebine yönelik doğru tespiti ve yönlendirmeyi (ör. şikayet, bilgilendirilme ve ürün satın alma) yapmak.
4. Ürün satın alma talebi (cihaz, aksesuar ve hat satışı) ile gelen müşterinin bir üründe ne tür özellikler aradığını ve fiyat aralığının ne olduğunu sormak.
5. Müşterinin aradığı özelliklere uygun ürünleri müşteriye sunmak.
6. Müşteriyi ürünün özelliklerine yönelik ayrıntılı bilgilendirmek (ör. telefonun işlemcisi, işletim hızı, konuşma süresi, kamera özellikleri)
7. Müşterinin mevcut talebini karşılayacak fakat aynı zamanda ek satış yapılacak farklı alternatif kampanyalar sunmak. (Ör. Akıllı telefon almak isteyen fakat bu telefonun bedeli altında fiyat aralığı olan müşterilere faturalı hat üzerinde her ay faturaya ek ücret karşılığı telefon satışı yapmak)
8. Satış işlemi sırasında ortaya çıkabilecek şikayet ve sorunlarla baş etmek.
9. Sorunun çözümüne yönelik iletişim danışmanından destek almak ve müşteriyi durumla ilgili doğru bilgilendirmek.
10. Yine sorunun çözüne yönelik alternatif satışlar yapmak (Ör. Yüksek fatura şikayeti ile gelen müşteriyi farklı bir faturalı hatta geçirmek ve bu hat üzerinden telefon satışı yapmak)
11. Ürün satış bedeline ve ödeme seçeneklerine yönelik güncel bilgiyi iletişim danışmanından talep etmek
12. Müşteriyi satış bedeline ve ödeme seçeneklerine yönelik bilgilendirmek.
13. Ürün satışı ile ilgili müşteri ile uzlaşma sağmak.
14. Aktivasyon gerektiren satışlarda (hat)müşteriden işleminin tamamlanması için gerekli olan evrakları (ikametgah belgesi, nüfus cüzdanı fotokopisi, sabit evrak) talep etmek.
15. Satış işleminin tamamlanması için gerekli olan satış sözleşmesini müşterinin sunduğu bilgilere göre düzenlemek.
16. Satış sözleşmesini müşteriye imzalatmak.

17. Düzenlenen ve talep edilen evraklarla birlikte müşteriyi iletişim danışmanına yönlendirmek.

18. İletişim danışmanında işlemleri tamamlanan müşteriye ödeme için kasa sorumlusuna yönlendirmek ve müşteriye eşlik etmek.

19. Aktivasyon gerektirmeyen durumlarda (telefon satışı) müşteriyi ödeme için kasa sorumlusuna yönlendirmek.

20. Telefon satışlarına ek olarak müşteriye aksesuar önermek.

21. Alınan aksesuarları telefonlara takmak ve gereken durumlarda yeni alınmış ürüne yönelik işlemleri yürütmek (numaraları eski telefondan yeni telefona aktarmak, Sim kart kesme)

22. İşlem sonrasında müşteriyi güler yüzle uğurlamak

23. İşlem sonrasında müşteri ile irtibat gerektiren durumlarda (eksik evrak) müşteri ile telefonla iletişime geçmek ve sorunu çözmek.

APPENDIX C: Task Statements of the Communication Advisor Position

1. Mağazaya gelen müşterileri güleryüzle karşılamak.
2. Müşterinin mağazaya geliş sebebini sormak.
3. Firmaya yönelik her türlü bilgiyi firmanın ekranından edinmek.
4. Şikâyetleri almak ve şikayeti doğru analiz etmek
5. Şikâyetlerin çözüme ulaşması için müşteriye ekrandaki bilgiyi sunmak (Kaç dakika sabit hatlar ile görüşmüş, faturanın yüksek gelmesinin sebebi nedir)
6. Tarife ya cihazlara yönelik ekrana düşen tarifelerle sinyallerden iş arkadaşlarını haberdar etmek
7. Kampanya detaylarına yönelik arkadaşlara güncel bilgi sunmak
8. Satış danışmanı ve kasa sorumlusu tarafından hat aktivasyonu için yönlendirilen müşterilerin işlemlerini yürütmek
9. Müşterinin kampanyadan yararlanma uygunluğunu kontrol etmek
10. Şikayetin çözüne yönelik alternatif satışlar yapmak (Ör. Yüksek fatura şikayeti ile gelen müşteriyi farklı bir faturalı hatta geçirmek ve bu hat üzerinden telefon satışı yapmak)
11. Müşteriye bir üründe ne tür özellikler aradığını ve fiyat aralığının ne olduğunu sormak.
12. Müşterinin aradığı özelliklere uygun ürünleri müşteriye sunmak.
13. Müşteriyi ürünün özelliklerine yönelik ayrıntılı bilgilendirmek (ör. telefonun işlemcisi, işletim hızı, konuşma süresi, kamera özellikleri)
14. Satış işlemi sırasında eğer müşterinin daha önce satın almış olduğu hizmete yönelik şikayeti var ise sorunu çözmek.
15. Müşteriyi satış bedeline ve ödeme seçeneklerine yönelik bilgilendirmek.
16. Aktivasyon için gerekli evrakları (ikametgah belgesi, nüfus cüzdanı fotokopisi, sabit evrak) talep etmek
17. Satış işleminin tamamlanması için gerekli olan satış sözleşmesini müşterinin sunduğu bilgilere göre düzenlemek.
18. Müşteriden talep edilen ve hazırlanan evraklar üzerindeki bilgileri ekrana girmek

19. İşlemlerin tamamlanmasından sonra müşteriye ödeme için kasa sorumlusuna yönlendirmek ve müşteriye eşlik etmek.

20. Aktivasyon gerektirmeyen durumlarda (telefon satışı) müşteriyi ödeme için kasa sorumlusuna yönlendirmek.

21. İşlem sonrasında müşteriyi güler yüzle uğurlamak

22. İşlem sonrasında müşteri ile irtibat gerektiren durumlarda (eksik evrak) müşteri ile telefonla iletişime geçmek ve sorunu çözmek.

23. İlgili evrakların üzerine kendi kimlik numarasının ve bayi numarasının yer aldığı kaşeyi basmak

24. Firma olarak çözüme ulaştırılamayan problemlerin çözümü için "bayii çözüm merkezi" ile ietşime geçmek ve sorunun çözümünü sağlamak.

25. Hattın açılması için gerekli olan abonelik sözleşmesi, numara taşıma formu vb. evrakları tarayarak ekrana kayıt etmek.

26. Günün sonunda gün içerisinde işyerindeki elemanlar tarafından yapılan işlemlerin yer aldığı maili hazırlamak ve yöneticilere ulaştırmak.

APPENDIX D: Team Task Analysis Questionaire

İLETİŞİM MERKEZİ ÇALIŞANLARI İŞ ANALİZİ ANKETİ

Bu anket, ODTÜ Endüstri ve Örgüt Psikolojisi yüksek lisans öğrencisi Derya Karanfil tarafından yürütülen yüksek lisans tezi kapsamında uygulanmaktadır. Çalışmanın amacı, takım üyeleri tarafından paylaşılan ortak zihinsel modellerin takım etkililiği üzerindeki rolünü incelemektir. Ayrıca bu çalışmada, kişiliğin ortak zihinsel model gelişimine olan etkisi de incelenecektir. Ortak zihinsel model içeriği oluşturulurken işin kapsadığı temel görevler kullanılacağından bu anket ön çalışma niteliği taşımaktadır. Bu amaçla gerçekleştirilen görüşmelerden yararlanılarak söz konusu işin kapsadığı temel görevler tespit edilmeye çalışılmıştır

Bu anket, işinizin kapsadığı düşünülen görevleri içermektedir. Sizden beklenen aşağıdaki açıklamaları dikkatlice okuyup, listelenen görevleri değerlendirmenizdir. Değerlendirmelerinizi yaparken ilk olarak verilen her bir görevin işinizle ilgili olup olmadığına karar veriniz. İlgili olmayan görevleri ilk kutuyu işaretleyerek belirtiniz. İlgili olan görevler için ise görece önem ve sıklık değerlendirmesi yapınız.

Katkılarınız için şimdiden teşekkür ederim.

Derya Karanfil

ODTÜ Endüstri ve Örgüt Psikolojisi

Aşağıda **iletişim merkezi çalışanları** olarak ortak yürüttüğünüz düşünülen görevler listelenmiştir. Lütfen, her bir maddeyi aşağıdaki açıklamalar doğrultusunda değerlendiriniz.

Önem Değerlendirmesi

Bu değerlendirmede işinizle ilgili olduğunu düşündüğünüz görevlerin işinizi gerçekleştirebilmek için ne kadar önemli olduğunu aşağıdaki ölçekte belirtilen değerler çerçevesinde puanlamanız beklenmektedir. Lütfen, değerlendirmenizi uygun rakamı daire içine alarak yapınız.

1 = Hiç önemli değil
2 = Önemli değil
3 = Ne önemli ne değil
4 = Önemli
5 = Çok önemli

Sıklık Değerlendirmesi

Bu değerlendirmede işinizle ilgili olduğunu düşündüğünüz görevleri ne kadar sıklıkla yaptığınızı aşağıdaki ölçekte belirtilen değerler çerçevesinde puanlamanız beklenmektedir. Lütfen, değerlendirmenizi uygun rakamı daire içine alarak yapınız.

1 = Çok nadiren
2 = Nadiren
3 = Bazen
4 = Sıklıkla
5 = Her zaman

Görev	İşinizle ilgili mi? E:Evet H:Hayır		Önemi 1.Hiç önemli değil 2.Önemli değil 3.Ne önemli ne değil 4. Önemli 5.Çok önemli					Sıklığı 1.Çok nadiren 2.Nadiren 3.Bazen 4.Sıklıkla 5.Her zaman				
1- Mağazaya gelen müşterileri güleryüzle karşılamak.	E	H	1	2	3	4	5	1	2	3	4	5
2- Müşterinin mağazaya geliş sebebi sormak.	E	H	1	2	3	4	5	1	2	3	4	5
3- Şikâyetleri almak ve şikayeti doğru analiz etmek	E	H	1	2	3	4	5	1	2	3	4	5
4- Müşterinin kampanyadan yararlanma uygunluğunu kontrol etmek	E	H	1	2	3	4	5	1	2	3	4	5
5- Şikayetin çözüne yönelik alternatif satışlar yapmak (Ör. Yüksek fatura şikayeti ile gelen müşteriyi farklı bir faturalı hatta geçirmek ve bu hat üzerinden telefon satışı yapmak)	E	H	1	2	3	4	5	1	2	3	4	5
6- Müşteriye bir üründe ne tür özellikler aradığını ve fiyat aralığının ne olduğunu sormak.	E	H	1	2	3	4	5	1	2	3	4	5
7- Müşterinin aradığı özelliklere uygun ürünleri müşteriye sunmak.	E	H	1	2	3	4	5	1	2	3	4	5
8- Müşteriyi ürünün özelliklerine yönelik ayrıntılı bilgilendirmek (ör. telefonun işlemcisi, işletim hızı, konuşma süresi, kamera özellikleri)	E	H	1	2	3	4	5	1	2	3	4	5
9- Satış işlemi sırasında eğer müşterinin daha önce satın almış olduğu hizmete yönelik şikayeti var ise sorunu çözmek.	E	H	1	2	3	4	5	1	2	3	4	5
10- Müşteriyi satış bedeline ve ödeme seçeneklerine yönelik bilgilendirmek.	E	H	1	2	3	4	5	1	2	3	4	5
11- Aktivasyon için gerekli evrakları (ikametgah belgesi, nüfus cüzdanı fotokopisi, sabit evrak) talep etmek	E	H	1	2	3	4	5	1	2	3	4	5

12- Satış işleminin tamamlanması için gerekli olan satış sözleşmesini müşterinin sunduğu bilgilere göre düzenlemek.	E	H	1	2	3	4	5	1	2	3	4	5
13- Müşteriden talep edilen ve hazırlanan evraklar üzerindeki bilgileri ekrana girmek	E	H	1	2	3	4	5	1	2	3	4	5
14- İşlemlerin tamamlanmasından sonra müşteriye ödeme için kasa sorumlusuna yönlendirmek ve müşteriye eşlik etmek.	E	H	1	2	3	4	5	1	2	3	4	5
15- Aktivasyon gerektirmeyen durumlarda (telefon satışı) müşteriyi ödeme için kasa sorumlusuna yönlendirmek.	E	H	1	2	3	4	5	1	2	3	4	5
16- İşlem sonrasında müşteriyi güler yüzle uğurlamak	E	H	1	2	3	4	5	1	2	3	4	5
17- İşlem sonrasında müşteri ile irtibat gerektiren durumlarda (eksik evrak) müşteri ile telefonla iletişime geçmek ve sorunu çözmek.	E	H	1	2	3	4	5	1	2	3	4	5

Aşağıda **iletişim merkezi çalışanı** olarak işinizin kapsadığı görevleri yerine getirirken gerekli olduğu takım süreçleri listesi bulunmaktadır. Lütfen, her bir maddeyi aşağıdaki açıklamalar doğrultusunda değerlendiriniz.

Önem Değerlendirmesi

Bu değerlendirmede işinizle ilgili olduğunu düşündüğünüz takım süreçlerinin görevlerinizi yerine getirirken ne derece önemli olduğunu aşağıdaki sunulan ölçeği kullanarak değerlendirmeniz beklenmektedir. Lütfen, değerlendirmenizi uygun rakamı daire içine alarak yapınız

1 = Hiç önemli değil 2 = Önemli değil 3 = Ne önemli ne değil 4 = Önemli 5 = Çok önemli

Takım Süreçleri	Önem 1.Hiç önemli değil 2.Önemli değil 3.Ne önemli ne değil 4. Önemli 5.Çok önemli				
1. Gözlemleme	1	2	3	4	5
2. Destek verme	1	2	3	4	5
3. Koordinasyon	1	2	3	4	5
4. Ağız birliği yapma	1	2	3	4	5
5. İletişim	1	2	3	4	5
6. Takım ruhu	1	2	3	4	5
7. Dayanışma	1	2	3	4	5
8. Uyumlu Olma	1	2	3	4	5
9. İşbirliği	1	2	3	4	5
10. Yardımlaşma	1	2	3	4	5
11. Bilgi paylaşımı	1	2	3	4	5

APPENDIX E: Relatedness Matrix

Aşağıda işinizin bir parçası olan bazı görevler sunulmaktadır. Sizden istenen, her bir görevin diğer görevlerle ne kadar alakalı olduğunu "-4"ten "+4"e giden cetvel üzerinde belirtmenizdir. Bazı görevler birbirleri ile daha yakından ilişkili iken, bazı görevler birbiri ile daha az ilişkilidir, bazıları ise birbiri ile tamamen ters yönde ilişkili olabilir.

Bu soruların doğru ya da yanlış cevabi yoktur. Önemli olan sizin her bir görev çiftini birbiri ile ne kadar alakalı gördüğünüzdür. Elde edilen bilgiler işyerlerinde takımların işleyiş şeklerini anlamada, araştırmacılara ışık tutacaktır.

Görev çiftlerinin sizce ne derece ilişkili olduğunu, kutucukların içerisine aşağıdaki cetvelden uygun gördüğünüz rakamı yazarak belirtiniz.

-4	-3	-2	-1	0	1	2	3	+4
Olumsuz Yönde İlişkili								Olumlu Yönde İlişkili

Bu çalışmaya yaptığınız katkı için şimdiden çok teşekkür ederim.

Derya Karanfil
Araştırmacı

	Müşterinin taleplerini öğrenmek	Müşterinin şikâyetlerini çözmek	Müşteriyi bilgilendirmek	Ürünleri tanıtmak	Evrak düzenlemek	Müşteriyi uğurlamak
Müşteriyi karşılamak	□	□	□	□	□	□
Müşterinin taleplerini öğrenmek		□	□	□	□	□
Müşterinin şikâyetlerini çözmek			□	□	□	□
Müşteriyi bilgilendirmek				□	□	□
Ürünleri tanıtmak					□	□
Evrak düzenlemek						□

APPENDIX F: The Questionnaire for Relatedness Rating Format

AÇIKLAMA: Aşağıda takım çalışmasına yönelik 7 boyut ve bu boyutların tanımları sunulmaktadır. Bir sonraki sayfada sizden, her bir boyutun diğer boyutlarla ne kadar alakalı olduğunu değerlendirmeniz istenmektedir. Değerlendirme öncesi lütfen sunulan tanımları dikkatlice okuyunuz. Bu tanımlar size boyutlara yönelik genel bir fikir verecektir. Değerlendirmelerinizi yaparken lütfen varsa daha önceki takım çalışması deneyimlerinizden yararlanınız.

Boyut	Tanım
Bilgi Alışverişi	İşle ilgili bilgilerin takım üyeleriyle paylaşılması.
Destek Olmak	Desteğe ihtiyacı olan takım arkadaşına işini tamamlamasında yardım etme; gereken durumlarda takım arkadaşının sorumluluğunda olan görevi üstlenme.
Takım Ruhu	Takım üyelerinin birlikte çalışmalarına ve işbirliği yapmalarına olanak sağlayan birliktelik/bütünlük hissi.
Yol Gösterme / Rehberlik Etme	Takım arkadaşının performansındaki sıkıntıyı fark etme, sıkıntının kaynağına yönelik yapılan tespiti arkadaşı ile paylaşma ve sıkıntının çözümüne yönelik alternatif yollar sunma. İşin nasıl yapılması gerektiğini yeni katılan üyeye anlatma ve gösterme.
Ağızbirliği Yapma	Takım üyelerinin işle ilgili konularda, fikir birliği içinde aynı sözleri söyleyip aynı şekilde davranması.
Ortaklaşa Sorun Çözme	Kişiye ya da takıma ait sorunlara birlikte, takım olarak çözüm üretme ve çözümü uygulama.
Koordineli Çalışma	İşi tamamlamak için birbirine bağlı bir şekilde çalışma, bilgi paylaşımı ve işbirliği yapma.

BÖLÜM 1:

Bu bölümde 9 boyut çifti sunulmaktadır. Sizden istenen, her bir boyut çiftinin ne kadar alakalı olduğunu "1"den "9"a giden cetvel üzerinde belirtmenizdir. Boyut çiftlerinin sizce ne derece ilişkili olduğunu, her bir çiftin sağ tarafındaki boş bölüme uygun gördüğünüz rakamı yazarak belirtiniz.

Hiç İlişkili Değiller				**Orta Derecede İlişkililer**				**Oldukça İlişkililer**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**

Destek Olma
Bilgi Alışverişi _____

Yol Gösterme /Rehberlik Etme
Ortaklaşa Sorun Çözme _____

Yol Gösterme/Rehberlik Etme
Takım Ruhu _____

Ağızbirliği Yapma
Yol Gösterme/Rehberlik Etme _____

Destek Olma
Ağızbirliği Yapma _____

Koordineli Çalışma
Ağızbirliği Yapma _____

Koordineli Çalışma
Takım Ruhu _____

Destek Olma
Ortaklaşa Sorun Çözme _____

Bilgi Alışverişi
Ağızbirliği Yapma _____

BÖLÜM 2:

Bu bölümde 11 boyut çifti sunulmaktadır. Sizden istenen, her bir boyut çiftinin ne kadar alakalı olduğunu "1"den "9"a giden cetvel üzerinde belirtmenizdir. Boyut çiftlerinin sizce ne derece alakalı olduğunu, aşağıdaki cetvelden uygun gördüğünüz rakamı daire için alarak belirtiniz.

	Hiç İlişkili Değiller				Orta Derecede İlişkiler				Oldukça İlişkililer
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Ortaklaşa Sorun Çözme — Takım Ruhu	1	2	3	4	5	6	7	8	9
Yol Gösterme/Rehberlik Etme —Koordineli Çalışma	1	2	3	4	5	6	7	8	9
Koordineli Çalışma — Bilgi Alışverişi	1	2	3	4	5	6	7	8	9
Bilgi Alışverişi — Ortaklaşa Sorun Çözme	1	2	3	4	5	6	7	8	9
Destek Olma – Yol Gösterme/Rehberlik Etme	1	2	3	4	5	6	7	8	9
Takım Ruhu—Ağızbirliği Yapma	1	2	3	4	5	6	7	8	9
Destek Olma —Koordineli Çalışma	1	2	3	4	5	6	7	8	9
Yol Gösterme/Rehberlik Etme —Bilgi Alışverişi	1	2	3	4	5	6	7	8	9
Koordineli Çalışma — Ortaklaşa Sorun Çözme	1	2	3	4	5	6	7	8	9
Bilgi Alışverişi —Takım Ruhu	1	2	3	4	5	6	7	8	9
Ortaklaşa Sorun Çözme —Ağızbirliği Yapma	1	2	3	4	5	6	7	8	9

1. Boyutların tanımları açık mı?

   Evet □ **Hayır** □

2. Boyutların tanımlanması eşleştirmelerin yapılmasına katkı sağladı mı?

   Evet □ **Hayır** □

3. Hangi bölümdeki ölçek daha anlaşılırdı?

   Birinci Bölüm □ **ikinci Bölüm** □

4. Hangi bölümdeki ölçek kullanımı daha kolaydı?

   Birinci Bölüm □ **ikinci Bölüm** □

APPENDIX G : Survey Package

Kişisel Bilgiler

1. Cinsiyetiniz: □Kadın □Erkek

2. Yaşınız:_____

2. Yaşadığınız yer:_____

3. Eğitim durumunuz:

□İlkokul □Ortaokul □ Lise □ Üniversite □ Yüksek lisans/Doktora

4. Mesleğiniz:_____

5. Kaç yıldır GSM sektöründe çalışıyorsunuz?

6. Kaç yıldır bu firmada çalışıyorsunuz? Yıl ve ay olarak _____

7. Kaç yıldır bu iletişim merkezinde çalışıyorsunuz?

AÇIKLAMA: Aşağıda takım çalışmasına yönelik 7 boyut ve bu boyutların tanımları sunulmaktadır. Bir sonraki sayfada sizden, her bir boyutun diğer boyutlarla ne kadar alakalı olduğunu değerlendirmeniz istenmektedir.

Değerlendirme öncesi lütfen sunulan tanımları dikkatlice okuyunuz.

Bu tanımlar size boyutlara yönelik genel bir fikir verecektir.

Boyut	Tanım
Bilgi Alışverişi	İşle ilgili bilgilerin takım üyeleriyle paylaşılması.
Destek Olmak	Desteğe ihtiyacı olan takım arkadaşına işini tamamlamasında yardım etme; gereken durumlarda takım arkadaşının sorumluluğunda olan görevi üstlenme.
Takım Ruhu	Takım üyelerinin birlikte çalışmalarına ve işbirliği yapmalarına olanak sağlayan birliktelik/bütünlük hissi.
Yol Gösterme / Rehberlik Etme	Takım arkadaşının performansındaki sıkıntıyı fark etme, sıkıntının kaynağına yönelik yapılan tespiti arkadaşı ile paylaşma ve sıkıntının çözümüne yönelik alternatif yollar sunma. İşin nasıl yapılması gerektiğini yeni katılan üyeye anlatma ve gösterme.
Ağızbirliği Yapma	Takım üyelerinin işle ilgili konularda, fikir birliği içinde aynı sözleri söyleyip aynı şekilde davranması.
Ortaklaşa Sorun Çözme	Kişiye ya da takıma ait sorunlara birlikte, takım olarak çözüm üretme ve çözümü uygulama.
Koordineli Çalışma	İşi tamamlamak için birbirine bağlı bir şekilde çalışma, bilgi paylaşımı ve işbirliği yapma.

DEĞERLENDİRMENİZİ YAPARKEN BU TANIM LİSTESİNDEN DEĞİL, LÜTFEN İŞ YERİNİZDEKİ DENEYİMLERİNİZDEN YARARLANINIZ.

Bu bölümde takım çalışmasına yönelik 21 boyut çifti sunulmaktadır. Sizden istenen, her bir boyut çiftinin ne kadar alakalı olduğunu "1"den "9"a giden cetvel üzerinde belirtmenizdir. Boyut çiftlerinin sizce ne derece alakalı olduğunu, aşağıdaki cetvelden uygun gördüğünüz rakamı <u>daire</u> için alarak belirtiniz.

	Hiç İlişkili Değiller				**Orta Derecede İlişkiler**				**Oldukça İlişkililer**
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Ortaklaşa Sorun Çözme — Takım Ruhu	1	2	3	4	5	6	7	8	9
Yol Gösterme/Rehberlik Etme —Koordineli Çalışma	1	2	3	4	5	6	7	8	9
Koordineli Çalışma — Bilgi Alışverişi	1	2	3	4	5	6	7	8	9
Bilgi Alışverişi — Ortaklaşa Sorun Çözme	1	2	3	4	5	6	7	8	9
Destek Olma — Yol Gösterme/Rehberlik Etme	1	2	3	4	5	6	7	8	9
Takım Ruhu—Ağızbirliği Yapma	1	2	3	4	5	6	7	8	9
Destek Olma — Koordineli Çalışma	1	2	3	4	5	6	7	8	9
Yol Gösterme/Rehberlik Etme —Bilgi Alışverişi	1	2	3	4	5	6	7	8	9
Koordineli Çalışma — Ortaklaşa Sorun Çözme	1	2	3	4	5	6	7	8	9
Bilgi Alışverişi —Takım Ruhu	1	2	3	4	5	6	7	8	9
Ortaklaşa Sorun Çözme —Ağızbirliği Yapma	1	2	3	4	5	6	7	8	9
Destek Olma — Bilgi Alışverişi	1	2	3	4	5	6	7	8	9
Yol Gösterme/Rehberlik Etme — Takım Ruhu	1	2	3	4	5	6	7	8	9
Destek Olma — Ağızbirliği Yapma	1	2	3	4	5	6	7	8	9
Koordineli Çalışma — Takım Ruhu	1	2	3	4	5	6	7	8	9
Bilgi Alışverişi — Ağızbirliği Yapma	1	2	3	4	5	6	7	8	9
Ortaklaşa Sorun Çözme —Destek Olma	1	2	3	4	5	6	7	8	9
Ağızbirliği Yapma — Yol Gösterme/Rehberlik Etme	1	2	3	4	5	6	7	8	9
Koordineli Çalışma — Ağızbirliği Yapma	1	2	3	4	5	6	7	8	9
Takım Ruhu — Destek Olma	1	2	3	4	5	6	7	8	9
Ortaklaşa Sorun Çözme —Yol Gösterme/Rehberlik Etme	1	2	3	4	5	6	7	8	9

Bu bölümde işinizin kapsadığı düşünülen 21 görev çifti sunulmaktadır. Sizden istenen, her bir görev çiftinin ne kadar alakalı olduğunu "1"den "9"a giden cetvel üzerinde belirtmenizdir. Görev çiftlerinin sizce ne derece alakalı olduğunu, aşağıdaki cetvelden uygun gördüğünüz rakamı <u>daire</u> için alarak belirtiniz.

	Hiç İlişkili Değiller				**Orta Derecede İlişkiler**				**Oldukça İlişkililer**
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Karşılama — Uğurlama	1	2	3	4	5	6	7	8	9
Uğurlama — Şikayet Çözme	1	2	3	4	5	6	7	8	9
Talebi Öğrenme — Ürün Tanıtma	1	2	3	4	5	6	7	8	9
Evrak Düzenleme — İşlem Takibi	1	2	3	4	5	6	7	8	9
Evrak Düzenleme —Şikayeti Çözme	1	2	3	4	5	6	7	8	9
Ürün Tanıtma — Karşılama	1	2	3	4	5	6	7	8	9
Karşılama —Evrak Düzenleme	1	2	3	4	5	6	7	8	9
Talebi Öğrenme — Uğurlama	1	2	3	4	5	6	7	8	9
Ürün Tanıtma — İşlem Takibi	1	2	3	4	5	6	7	8	9
Uğurlama — Evrak Düzenleme	1	2	3	4	5	6	7	8	9
Talebi Öğrenme — Evrak Düzenleme	1	2	3	4	5	6	7	8	9
Karşılama — İşlem Takibi	1	2	3	4	5	6	7	8	9
Talebi Öğrenme — Şikayeti Çözme	1	2	3	4	5	6	7	8	9
Karşılama — Talebi Öğrenme	1	2	3	4	5	6	7	8	9
Ürün Tanıtma — Şikayeti Çözme	1	2	3	4	5	6	7	8	9
Talebi Öğrenme — İşlem Takibi	1	2	3	4	5	6	7	8	9
Uğurlama —İşlem Takibi	1	2	3	4	5	6	7	8	9
Şikayeti Çözme —İşlem Takibi	1	2	3	4	5	6	7	8	9
Karşılama — Şikayeti Çözme	1	2	3	4	5	6	7	8	9
Ürün Tanıtma — Evrak Düzenleme	1	2	3	4	5	6	7	8	9
Uğurlama — Ürün Tanıtma	1	2	3	4	5	6	7	8	9

Aşağıda kişileri tanımlamaya yönelik ifadeler yer almaktadır. Lütfen, her bir ifadeye ne derecede katıldığınızı, sunulan 5-basamaklı cetvel üzerinde uygun rakamı daire içine alarak belirtiniz.

	Kesinlikle Katılmıyorum	Biraz Katılmıyorum	Kararsızım	Biraz Katılıyorum	Kesinlikle Katılıyorum
1. Başkalarına güvenirim.	1	2	3	4	5
2. İnsanların ahlaklı olduklarına inanırım.	1	2	3	4	5
3. Her şeyin iyi olacağına inanırım.	1	2	3	4	5
4. Sivri dilliyimdir.	1	2	3	4	5
5. Israrcı bir kişi olarak görünmekten nefret ederim	1	2	3	4	5
6. Dalaşmayı severim	1	2	3	4	5
7. Diğerlerinden öç alırım.	1	2	3	4	5
8. Planları hayata geçiririm.	1	2	3	4	5
9. İdare edecek kadar çalışırım.	1	2	3	4	5
10. İnsanları bir araya getirmekten hoşlanırım.	1	2	3	4	5
11. İnsanları neşelendiririm.	1	2	3	4	5
12. Başkaları beni gerçekten ilgilendirmez.	1	2	3	4	5
13. İnsanların gizli niyetlerinden şüphelenirim.	1	2	3	4	5
14. Kin beslerim.	1	2	3	4	5
15. Başkalarının söylediklerine güvenirim.	1	2	3	4	5
16. Beni memnun etmek kolaydır.	1	2	3	4	5
17. İnsanlara güvenmem.	1	2	3	4	5
18. İnsanlara bağırırım.	1	2	3	4	5
19. İnsanların söylediklerine temkinli yaklaşırım.	1	2	3	4	5
20. Hedefe odaklanırım.	1	2	3	4	5
21. İnsanların özlerinde kötü olduklarına inanırım.	1	2	3	4	5
22. Yapılan işte kalite ararım.	1	2	3	4	5

23. İşime az zaman ve emek harcarım.	1	2	3	4	5
24. Diğer kişilerin duygularının farkına varırım.	1	2	3	4	5
25. İnsanların rahat hissetmesini sağlarım.	1	2	3	4	5
26. Başkalarının problemlerine karışmaktan hoşlanmam.	1	2	3	4	5
27. İşime yürekten asılırım.	1	2	3	4	5
28. İnsanlarda iyiliğin erdemine inanırım.	1	2	3	4	5
29. İnsanların, iyi niyetli olduğunu düşünürüm.	1	2	3	4	5
30. Başarılı olma konusunda yüksek motivasyonlu değilimdir.	1	2	3	4	5
31. Diğerleriyle zıtlaşırım.	1	2	3	4	5
32. İnsanlara ağır konuşurum.	1	2	3	4	5
33. Sıkı çalışırım.	1	2	3	4	5
34. Benden beklenenden daha fazlasını yaparım.	1	2	3	4	5
35. Yüzleşmelere katlanamam.	1	2	3	4	5
36. İnsanları nasıl rahatlatacağımı bilirim.	1	2	3	4	5
37. Başkalarının hayatlarına ilgi/alaka gösteririm.	1	2	3	4	5
38. Diğer insanlara zaman ayırırım.	1	2	3	4	5
39. İlgi bekleyenleri kafama takmam.	1	2	3	4	5
40. Kendim ve diğerleri için yüksek standartlar belirlerim.	1	2	3	4	5

Aşağıda takımınızı anlamaya yönelik cümleler yer almaktadır. Lütfen, her bir maddede belirtilen durumun sizin takımınız için uygunluğunu sunulan 5-basamaklı cetvel üzerinde uygun rakamı daire içine alarak belirtiniz.

	Kesinlikle Katılmıyorum	**Biraz Katılmıyorum**	**Kararsızım**	**Katılıyorum**	**Kesinlikle Katılıyorum**
1. Takımımın üyeleri takımımızı çok fazla önemserler ve onu en iyisi yapmak için birlikte çalışırlar.	1	2	3	4	5
2. Takımımızın kendine güveni tamdır.	1	2	3	4	5
3. Takım üyeleri ile çalışmak enerji verici ve canlandırıcı bir deneyimdir.	1	2	3	4	5
4. Takımımız yüksek kaliteli işler üreterek olağanüstü iyi olabileceğine inanıyor.	1	2	3	4	5
5. Takım üyeleri arasında hoş olmayan çok şey var.	1	2	3	4	5
6. Takımımız yüksek performanslı bir takım olarak bilinmeyi bekler.	1	2	3	4	5
7. Takımın bazı üyeleri toplam iş yükünden kendilerine düşen payı yerine getirmez.	1	2	3	4	5
8. Takımımız karşılaştığı her türlü problemi çözebileceğine inanıyor.	1	2	3	4	5
9. Kimi zaman, aramızdan birisi diğer takım üyesine yardımda bulunmayı red eder.	1	2	3	4	5
10. Takımımız oldukça üretken olabileceğine inanıyorlar.	1	2	3	4	5
11. Bir takım olarak, bu çalışma grubu dağılma sinyalleri gösteriyor.	1	2	3	4	5
12. Takımımız sıkı/yoğun çalıştığında çok iş bitirebilir.	1	2	3	4	5
13. Uygun olmayan davranışlar sergileyen bir takım üyesini düzeltmeye çalıştığımız her zaman, işler daha iyiye gitmek yerine daha kötü olur.	1	2	3	4	5
14. Hiçbir görev/iş takımımız için çok zor değildir.	1	2	3	4	5

Aşağıda kişileri tanımlamaya yönelik ifadeler yer almaktadır. Lütfen, her bir ifadeye n derecede katıldığınızı, sunulan 5-basamaklı cetvel üzerinde uygun rakamı daire içine alarak belirtiniz.

	Kesinlikle Katılmıyorum	Biraz Katılmıyorum	Kararsızım	Biraz Katılıyorum	Kesinlikle Katılıyorum
1. Orijinal fikirler üretirim.	1	2	3	4	5
2. İlgi alanlarım çok çeşitlidir.	1	2	3	4	5
3. Kararlarımda çok yönlü düşünmeye çalışırım	1	2	3	4	5
4. Hayal gücüm kuvvetlidir.	1	2	3	4	5
5. Yaratıcıyımdır.	1	2	3	4	5
6. Değişimi severim.	1	2	3	4	5
7. Farklı şeyler denemeyi severim.	1	2	3	4	5
8. Fikir jimnastiği yapmayı severim.	1	2	3	4	5
9. Yeni yerler keşfetmeyi severim.	1	2	3	4	5
10. Depresifimdir.	1	2	3	4	5
11. Stresle kolay başa çıkabilirim.	1	2	3	4	5
12. Telaşlıyımdır.	1	2	3	4	5
13. Çabuk gerilirim.	1	2	3	4	5
14. Kaygılıyımdır.	1	2	3	4	5
15. Ruh halim dengelidir.	1	2	3	4	5
16. Bazen karamsar olabilirim.	1	2	3	4	5
17. Ruh halim çevremden çabuk etkilenir.	1	2	3	4	5
18. Baskı altındayken sakin kalabilirim.	1	2	3	4	5
19. Çabuk sinirlenirim.	1	2	3	4	5
20. Konuşkanımdır.	1	2	3	4	5
21. İçime kapanığımdır.	1	2	3	4	5
22. Enerjiğimdir.	1	2	3	4	5
23. Coşkulu bir yapım vardır.	1	2	3	4	5
24. Genel itibariyle sessiz, sakin bir yapım vardır.	1	2	3	4	5
25. Çekingenimdir.	1		3	4	5
26. Utangacımdır.	1	2	3	4	5
27. Sosyalimdir.	1	2	3	4	5
28. Sempatiğimdir.	1	2	3	4	5
29. İşimi savsaklarım.		2	3	4	5
30. Biraz dikkatsiz olabilirim.	1	2	3	4	5
31. Üzerime aldığım işi bitiririm.	1	2	3	4	5
32. Dağınığımdır.	1		3	4	5
33. Düzenliyimdir.	1	2	3	4	5
34. Genel itibariyle tembel bir yapım vardır.	1	2	3	4	5

35. Elimdeki işi bitirene kadar rahat edemem.	1	2	3	4	5
36. Yaptığım planlara sadık kalırım.	1	2	3	4	5
37. Tutumluyumdur.	1	2	3	4	5
38. Başkalarında kusur bulmaya eğilimliyimdir.	1	2	3	4	5
39. Yardımseverimdir.	1	2	3	4	5
40. Tartışmaları başlatan taraf genelde ben olurum.	1	2	3	4	5
41. Bağışlayıcı bir kişiliğim vardır.	1	2	3	4	5
42. Uyumluyumdur.	1	2	3	4	5
43. İnsanlara genellikle güvenirim.	1	2	3	4	5
44. Bazen insanlara karşı soğuk ve ilgisiz olabilirim.	1	2	3	4	5
45. Hemen herkese karşı kibarımdır.	1	2	3	4	5
46. İnsanlarla çatışmamaya çalışırım.	1	2	3	4	5
47. Birlikte çalışırken, işleri inada bindirmem.	1	2	3	4	5

Aşağıda takımları tanımlamaya yönelik ifadeler yer almaktadır. Lütfen, her bir ifadeye ne derecede katıldığınızı, sunulan 5-basamaklı cetvel üzerinde uygun rakamı daire içine alarak belirtiniz.

	Kesinlikle Katılmıyorum	Biraz Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
1. Takımımın belirli takım görevleri hakkında bilgisi vardır.	1	2	3	4	5
2. Takımım yapılması istenilenleri yerine getirir.	1	2	3	4	5
3. Takımın çeşitli iş bölümleri arasındaki bağlantıyı bilir.	1	2	3	4	5
4. Takımım çeşitli görev problemlerine çözüm ararken farklı bakış açılarını değerlendirir.	1	2	3	4	5
5. Takımım görevini yaparken sınırlılıklarını değerlendirir.	1	2	3	4	5
6. Takımım çeşitli görevleri yaparken ortak amacı paylaşır.	1	2	3	4	5
7. Takımım amacını değerlendirir ve takım arkadaşları arasında görüş birliği sağlanır.	1	2	3	4	5
8. Takımım çeşitli görevleri tamamlamada belirli stratejileri bilir.	1	2	3	4	5
9. Takımım belirlenen görevi uygulamada genel süreci bilir.	1	2	3	4	5
10. Takımım çeşitli takım görevlerini uygulamada gerekli becerilere sahip olduğunun farkındadır.	1	2	3	4	5
11.Takımım takım görevlerini yerine getirirken diğer takım arkadaşları ile iletişim halindedir	1	2	3	4	5
12. Takımım genel takım becerileriyle kişisel becerilerin sürekli gelişimini destekler.	1	2	3	4	5
13. Takımlar çeşitli takım görevlerinin başlangıcında iletişim kanallarını tanımlar.	1	2	3	4	5
14. Takımım görev değerlendirmelerinde ortak dil kullanır.	1	2	3	4	5
15.Takımım çeşitli takım görevleri boyunca birbirleriyle gayri resmi iletişim kurar.	1	2	**3**	4	5
16. Takımım sürekli etkili dinleme becerileri gösterir.	1	2	3	4	5

17. Takımım çeşitli takım görevlerini yapmaktan hoşlanır.	1	2	3	4	5
18. Takımım çeşitli takım görevlerinin sonuçlarını geliştirmede birbirlerinin çalışmalarını destekler.	1	2	3	4	5
19. Takımım çalışmasından gurur duyar	1	2	3	4	5
20. Takımım düşünmeyi sever	1	2	3	4	5
21. Takımımda takım arkadaşları arasında çözülemeyecek etik (ahlaki) problemler yoktur.	1	2	3	4	5
22.Takımım bilgileri paylaşır ve takım üyeleri bilgileri kendine saklamaz.	1	2	3	4	5
23. Takımımım takım amacına bağlıdır.	1	2	3	4	5
24. Takımda bulunan herkes düşüncesini açıklamaya (belirtmeye) uğraşır.	1	2	3	4	5
25. Takımım çeşitli takım görevlerini yerine getirirken görevlerinin ve sorumluluklarının farkındadır.	1	2	3	4	5
26. Takımım çeşitli takım görevlerini yerine getirirken bilgiye nereden ulaşacağının farkındadır.	1	2	3	4	5
27. Takımım birbirini etkileme durumunun farkındadır.	1	2	3	4	5
28. Takımım farklı çalışma durumları hakkında birbirine bilgi verir.	1	2	3	4	5
29. Takımım birlikte karar alabilir.	1	2	3	4	5
30. Takımım çeşitli takım görevlerini gerçekleştirirken kendine verilen herhangi bir görevi yerine getirebilir.	1	2	3	4	5
31. Takımım birbirine bağlı görevleri üstlenir.	1	2	3	4	5
32. Takımım çeşitli takım görevlerini yerine getirirken nasıl bilgi değişimi yapacağının farkındadır.	1	2	3	4	5
33. Takımım çeşitli takım görevlerini yerine getirirken çıkan sorunları çözer.	1	2	3	4	5
34. Takımımda güven havası vardır.	1	2	3	4	5
35. Takımım verimli sonuçlar elde etmesini sağlayan çalışma ortamı yaratır	1	2	3	4	5
36. Takımım takım başarısı etkileyen herhangi bir konuyu açıkça değerlendirmek için güvenli bir ortam yaratır.	1	2	3	4	5

37. Takımım, takım ruhuna destek veren davranışları fark eder ve ödüllendirir.	1	2	3	4	5
38. Takımım en fazla çıkarı elde etmek için farklı fikirlerden yararlanır.	1	2	3	4	5
39. Takımda karar alma değerlendirmeleri toplantılarda yapılır bu yüzden takım toplantıları yararlı aktiviteler olarak görünür.	1	2	3	4	5
40. Takımımda olumlu(pozitif) bir takım havası vardır.	1	2	3	4	5
41. Takımım deneyimli birçok insanın bulunduğu, yeterli tecrübeye sahip bir takımdır.	1	2	3	4	5
42. Takımım çeşitli takım görevlerini yerine getirirken çevre kısıtlamalarının farkındadır.	1	2	3	4	5

Bu firmada takım olarak çalıştığınızı düşünüyor musunuz? Evet □ Hayır □

APPENDIX H: Teams Obtained Smm Scores in Teamwork, Taskwork and TADI

	SMM Implicit		Explicit SMM		
Team#	Teamwork SMM	Taskwork SMM	TADM (Mean)	TADM (1-SD)	TADM (Rwg)
1	0.42	0.52	4.17	0.31	0.37
2	0.54	0.38	3.27	-0.97	0
3	0.37	0.35	4.6	0.86	0.76
4	0.38	0.52	4.22	0.47	0.62
5	0.40	0.28	4.04	0.86	0.84
6	0.47	0.41	4.4	0.69	0.65
7	0.55	0.50	4.73	0.69	0.87
8	0.52	0.39	4.8	0.8	0.91
9	0.54	0.42	4.63	0.47	0.76
10	0.48	0.33	4.35	0.25	0.42
11	0.34	0.30	3.65	0.12	0.43
12	0.38	0.31	4.14	0.28	0.51
13	0.36	0.36	4.52	0.4	0.77
14	0.36	0.40	4.48	0.39	0.74
15	0.35	0.37	4.36	0.38	0.56
16	0.36	0.40	4.28	0.18	0.43
17	0.33	0.43	4.81	0.72	0.9
18	0.39	0.44	4.67	0.48	0.84
19	0.51	0.53	4.3	0.31	0.57
20	0.34	0.45	4.28	0.22	0.54
21	0.53	0.62	3.9	0.16	0.52
22	0.94	0.84	4.89	0.81	0.94
23	0.27	0.35	3.61	0.27	0.42
24	0.40	0.58	4.19	0.64	0.76
25	0.33	0.29	3.17	0.09	0.31
26	0.32	0.39	4.73	0.74	0.84
27	0.39	0.36	4.21	0.22	0.41

Note. SMMM = Shared Mental Model. TADI = Team Assessment and Diagnostic Measure.

APPENDIX I: Exploratory Factor Analysis on Trust

Items	Loadings	Explained Variance
Factor 1		29.67 %
15. Başkalarının söylediklerine güvenirim.	.733	
29. İnsanların, iyi niyetli olduğunu düşünürüm.	.665	
17. İnsanlara güvenmem. (Reversed)	.659	
2. İnsanların ahlaklı olduklarına inanırım.	.643	
1. Başkalarına güvenirim.	.641	
28. İnsanlarda iyiliğin erdemine inanırım.	.572	
19. İnsanların söylediklerine temkinli yaklaşırım. (Reversed)	.359	
13. İnsanların gizli niyetlerinden şüphelenirim. (Reversed)	.355	
21. İnsanların özlerinde kötü olduklarına inanırım. (Reversed)	.277	
3. Her şeyin iyi olacağına inanırım.	.268	

APPENDIX J: Exploratory Factor Analysis on Cooperation

Items	Loadings	Explained Variance
Factor 1		29.02 %
31. Diğerleriyle zıtlaşırım. (Reversed)	.798	
32. İnsanlara ağır konuşurum. (Reversed)	.746	
18. İnsanlara bağırırım. (Reversed)	.731	
4. Sivri dilliyimdir. (Reversed)	.546	
14. Kin beslerim. (Reversed)	.525	
7. Diğerlerinden öç alırım. (Reversed)	.485	
6. Dalaşmayı severim. (Reversed)	.483	
Factor 2		14.54 %
16. Beni memnun etmek kolaydır.	.705	
5. Israrcı bir kişi olarak görünmekten nefret ederim	.705	
35. Yüzleşmelere katlanamam.		

APPENDIX K: Exploratory Factor Analysis on Achievement Striving

Items	Loadings	Explained Variance
Factor 1		26.73 %
34. Benden beklenenden daha fazlasını yaparım.	.726	
20. Hedefe odaklanırım.	.617	
27. İşime yürekten asılırım.	.605	
30. Başarılı olma konusunda yüksek motivasyonlu değilimdir. (Reversed)	.539	
22. Yapılan işte kalite ararım.	.536	
9. İdare edecek kadar çalışırım. (Reversed)	.509	
8. Planları hayata geçiririm.	.503	
33. Sıkı çalışırım.	.470	
40. Kendim ve diğerleri için yüksek standartlar belirlerim.	.295	
23. İşime az zaman ve emek harcarım. (Reversed)	.011	

APPENDIX L Exploratory Factor Analysis on Warmth

Items	Loadings	Explained Variance
Factor 1		25.17 %
10. İnsanları bir araya getirmekten hoşlanırım.	.674	
38. Diğer insanlara zaman ayırırım.	.636	
36. İnsanları nasıl rahatlatacağımı bilirim.	.635	
25. İnsanların rahat hissetmesini sağlarım.	.615	
11. İnsanları neşelendiririm.	.577	
24. Diğer kişilerin duygularının farkına varırım.	.414	
37. Başkalarının hayatlarına ilgi/alaka gösteririm.	.328	
Factor 2		14.84%
12. Başkaları beni gerçekten ilgilendirmez. (Reversed)	.643	
26. Başkalarının problemlerine karışmaktan hoşlanmam. (Reversed)	.594	
39. İlgi bekleyenleri kafama takmam. (Reversed)	.572	

APPENDIX M: Exploratory Factor Analysis on Team Viability

Items	Loadings	Explained Variance
Factor 1		44.30 %
5. Takım üyeleri arasında hoş olmayan çok şey var. (Reversed)	.770	
1.Takımımın üyeleri takımımızı çok fazla önemserler ve onu en iyisi yapmak için birlikte çalışırlar.	.712	
9. Kimi zaman, aramızdan birisi diğer takım üyesine yardımda bulunmayı red eder. (Reversed)	.686	
7. Takımın bazı üyeleri toplam iş yükünden kendilerine düşen payı yerine getirmez. (Reversed)	.672	
11. Bir takım olarak, bu çalışma grubu dağılma sinyalleri gösteriyor. (Reversed)	.659	
13. Uygun olmayan davranışlar sergileyen bir takım üyesini düzeltmeye çalıştığımız her zaman, işler daha iyiye gitmek yerine daha kötü olur. (Reversed)	.613	
3. Takım üyeleri ile çalışmak enerji verici ve canlandırıcı bir deneyimdir.	.518	

APPENDIX N: Exploratory Factor Analysis on Team Potency

Items	Loadings	Explained Variance
Factor 1		47.44 %
14. Hiçbir görev/iş takımımız için çok zor değildir.	.754	
8. Takımımız karşılaştığı her türlü problemi çözebileceğine inanıyor.	.753	
4. Takımımız yüksek kaliteli işler üreterek olağanüstü iyi olabileceğine inanıyor.	.752	
12.Takımımız sıkı/yoğun çalıştığında çok iş bitirebilir.	.734	
2. Takımımızın kendine güveni tamdır.	.644	
10. Takımımız oldukça üretken olabileceğine inanıyorlar.	.635	
6. Takımımız yüksek performanslı bir takım olarak bilinmeyi bekler.	.514	

APPENDIX O: Exploratory Factor Analysis on Explicit Measure of SMM (TADI)

Items	Loadings	Explained Variance
Factor 1		56.47 %
7. Takımım amacını değerlendirir ve takım arkadaşları arasında görüş birliği sağlanır.	.824	
32. Takımım çeşitli takım görevlerini yerine getirirken nasıl bilgi değişimi yapacağının farkındadır.	.816	
8. Takımım çeşitli görevleri tamamlamada belirli stratejileri bilir.	.809	
11.Takımım takım görevlerini yerine getirirken diğer takım arkadaşları ile iletişim halindedir	.796	
17. Takımım çeşitli takım görevlerini yapmaktan hoşlanır.	.789	
33. Takımım çeşitli takım görevlerini yerine getirirken çıkan sorunları çözer.	.787	
36. Takımım takım başarısı etkileyen herhangi bir konuyu açıkça değerlendirmek için güvenli bir ortam yaratır.	.777	
18. Takımım çeşitli takım görevlerinin sonuçlarını geliştirmede birbirlerinin çalışmalarını destekler.	.776	
29. Takımım birlikte karar alabilir.	.751	
24. Takımda bulunan herkes düşüncesini açıklamaya (belirtmeye) uğraşır.	.746	
19. Takımım çalışmasından gurur duyar	.702	
9. Takımım belirlenen görevi uygulamada genel süreci bilir.	.700	
16. Takımım sürekli etkili dinleme becerileri gösterir.	.672	
41. Takımım deneyimli birçok insanın bulunduğu, yeterli tecrübeye sahip bir takımdır.	.657	
42. Takımım çeşitli takım görevlerini yerine getirirken çevre kısıtlamalarının farkındadır.	.636	

APPENDIX P: TURKISH SUMMARY

TÜRKÇE

ÖZET

GİRİŞ

Teknolojik ilerlemeler birçok işi daha karmaşık hale getirmekte ve bu durum işlerin bağımsız bir şekilde yapılmasını güçleştirmektedir (Mathieu, Heffner, Goodwin ve Cannon-Bowers, 2000). Teknolojik gelişmelere ve iş çevresinin belirsizliğine karşın etkililiği artırmak için takım odaklı yaklaşılmalar uygulanmaktadır (Guzzo ve Dickson, 1996; Mathieu ve ark., 2000). Takım alanyazınında, takım etkiliğini neyin yordadığı sorusundan niçin bazı takımlar diğerlerinden daha etkili sorusuna geçiş yaşanmaktadır (Ilgen, Hollenbeck, Johnson ve Jundt, 2005). Ortak biliş kavramı etkili ve etkisiz takımlar arasındaki farklılıkları anlamamıza katkı sağlamıştır (Cannon-Bowers ve Salas, 2001). Salas ve Cannon-Bowers (2001) göre ortak biliş etkili takımların üyelerinin takım arkadaşlarıyla ya uyumlu, tamamlayıcı, ya da örtüşen bilgiye sahip olduğu görüşüne kapsamaktadır.

Ortak bilişe yönelik bir yaklaşım olan ortak zihinsel model (OZM) son zamanlarda oldukça araştırma merakı uyandırmaktadır (Mathiue, Rapp, Maynard ve Mangos, 2010). Bilişsel psikoloji alanında zihinsel model kavramından doğan OZM takımların bilişsel yapılarından biri olarak görülmektedir (DeChurch ve Mesner-Magnus, 2010). Bireysel boyutta, zihinsel modeller etkileşimde olduğumuz sistemi tanımlamak, açıklamak ve tahmin etmek için kullanılan kavramsal yapılardır (Rouse ve Morris, 1986). Takım boyutunda bir olgu olan OZM " takım üyelerinin göreve yönelik doğru beklenti ve açıklamayı oluşturabilmelerini, eylemlerini koordine edebilmelerini ve davranışlarını görevin ve diğer takım üyelerinin istekleri doğrultusunda uyarlayabilmelerini sağlayan bilgi yapıları" olarak tanımlanmaktadır (Cannon-Bowers, Salas ve Converse, 1993, p. 228). OZM' nin takım etkiliği üzerindeki rolü üzerine birçok çalışmanın bulunmasına rağmen (Lim ve Klein, 2006; Marks, Sabella, Burke ve Zaccaro, 2002; Marks, Zaccaro ve Mathieu, 2000; Mathieu ve ark., 2000; Rentsch ve Klimoski, 2001; Smith-Jentsch, Mathieu ve Kraiger, 2005), OZM'nin ölçümü, sonuçları ve öncülerine yönelik halen birçok araştırma sorusu bulunmaktadır. Mevcut çalışma bu soruların bazılarını

cevaplamayı hedeflemektedir. Bu bağlamda, mevcut çalışmanın odağını OZM' nin dört yönü oluşturmaktadır.

İlk olarak, OZM'yi ölçmek için çeşitli yaklaşımlar bulunmaktadır. Fakat DeChurch ve Mesner-Magnus'un (2010) meta analizi farklı ölçüm tekniklerinin takım süreçlerini ve takım performansını farklı yordadığını göstermektedir. Bunun yanında, Resick ve arkadaşlarının (2010) birleşen, ayrım ve tahmin edici geçerlik çalışmaları, üç OZM ölçümü (yapısal ağlar, öncelik sıralaması ve önem derecelendirme) arasında sınırlı örtüşmeler olduğunu göstermiştir. Yukarıdaki bulgular OZM'nin altında yatan yapıyı yakalamak için temel OZM çeşitlerinin farklı yöntemlerle ölçülmesi gerektiğine işaret etmektedir. Bu nedenle, mevcut çalışmada, OZM' nin ölçümünde hem örtük/kapalı (ilişkilik değerlendirmesi) hem açık (öz-beyan/ölçek) olmak üzere iki farklı yöntem kullanılmıştır.

İkinci olarak, önceki araştırmalarda OZM ile takım çıktıları (performans) ve takım süreçleri (koordinasyon, iletişim ve destek davranışı) arasında anlamlı ilişkiler rapor edilmiş olmasına rağmen, OZM'nin takım sürdürebilirliği ve takım potansiyeli gibi duygusal çıktılar üzerindeki rolü hakkında çok az şey bilinmektedir. Bu nedenle, mevcut araştırma OZM ile takım performansı, takım sürdürebilirliği/dirimliliği ve takım potansiyeli arasındaki ilişkiyi araştırmayı hedeflemektedir.

Üçüncü olarak, ortak biliş alanyazınında takım oluşturma faktörleri ve OZM arasındaki ilişkiye görece az önem verilmiştir. Bilişsel yetenek (Edward, Day, Arthur Jr. ve Bell, 2006; Yang, Kang ve Mason, 2008) ve kişilik (Resick, Dickson, Mitchelson, Allison ve Clark, 2010) takım zihinsel model gelişiminin öncüleri olarak çalışılan konular arasında yer almaktadır. Kişilik faktörleri olarak Uyumluluk (Yang ve ark., 2008; Resick ve ark., 2010) ve Sorumluluk Bilinci (Resick ve ark., 2010) zihinsel model gelişimi ile pozitif yönde ilişkili olarak hipotez edilmiş ve Uyumluluk faktörüne yönelik hipotez desteklenmiştir. Mevcut araştırmada, LePine ve Van Dyne (2001)'nin kişiliğe yönelik alt boyut düzeyinde analiz ihtiyacı önerisi doğrultusunda, Uyumluluk ve onun alt boyutları olan Güven ve İşbirliği ile Sorumluluk Bilinci ve onun alt boyutu Başarı Kazanma Güdüsü ve OZM arasında pozitif yönde ilişki beklenmektedir. Bunun yanında, Dışadönüklük faktörü ile ortak zihinsel model arasında negatif yönde ilişki beklenirken,

ilgili faktörün alt boyutlarından Yakınlık ve OZM arasında pozitif yönde ilişki beklenmektedir.

Son olarak, OZM araştırmalarının birçoğu laboratuar ortamında yürütülmektedir. Araştırmacılar (Bradley, White ve Mennecke , 2003; Rentsch ve Klimoski, 2001) bu tür araştırmaların gerçek takım ortamlarına genellenebilirliğinin sınırlı olduğunu belirtmektedirler. Bu nedenle, mevcut çalışma bir saha araştırması olması itibarıyla bu problemle baş etmeyi hedeflemektedir.

Özetle, mevcut araştırma OZM'nin öncüsü olarak kişilik faktörlerini; OZM'nin sonuçları olarak da takım performansını, takım sürdürebilirliğini ve takım potansiyelini araştırmayı hedeflemektedir. Bunun yanında, mevcut araştırmanın hipotezleri kontrol altındaki bir laboratuar ortamı yerine doğal bir ortamda test edilmiştir. Son olarak, mevcut araştırmada, birçok OZM araştırmalarının yürütüldüğü aksiyon takımları yerine servis takımları üzerinde ve aşağıda sunulan hipotezler test edilmiştir:

Hipotez 1a: Takımların ortalama Uyumluluk düzeyleri göreve yönelik OZM, takıma yönelik OZM ve açık OZM ile pozitif yönde ilişkilidir.

Hipotez 1b: Takımların ortalama Güven düzeyleri göreve yönelik OZM, takıma yönelik OZM ve açık OZM ile pozitif yönde ilişkilidir.

Hipotez 1c: Takımların ortalama İşbirliği düzeyleri göreve yönelik OZM, takıma yönelik OZM ve açık OZM ile pozitif yönde ilişkilidir.

Hipotez 2a: Takımların ortalama Dışadönüklük düzeyleri göreve yönelik OZM, takıma yönelik OZM ve açık OZM ile negatif yönde ilişkilidir.

Hipotez 2b: Takımların ortalama Yakınlık düzeyleri göreve yönelik OZM, takıma yönelik OZM ve açık OZM ile pozitif yönde ilişkilidir.

Hipotez 3a: Takımların ortalama Sorumluluk düzeyleri göreve yönelik OZM, takıma yönelik OZM ve açık OZM ile pozitif yönde ilişkilidir.

Hipotez 3b: Takımların ortalama Başarı Kazanma Güdüsü düzeyleri göreve yönelik OZM, takıma yönelik OZM ve açık OZM ile pozitif yönde ilişkilidir.

Hipotez 4: Göreve yönelik OZM takım performansı ile pozitif yönde ilişkilidir.

Hipotez 5: Göreve yönelik OZM, takıma yönelik OZM ve açık OZM takım sürdürebilirliği ile pozitif yönde ilişkilidirler.

Hipotez 6: Göreve yönelik OZM, takıma yönelik OZM ve açık OZM takım potansiyeli ile pozitif yönde ilişkilidirler.

YÖNTEM

Örneklem

Mevcut araştırmanın örneklemi parakende teknoloji mağazalarında takım olarak çalışan 139 çalışandan (29 takımdan) oluşmaktadır. Her bir takımda üç farklı pozisyondan (kasa sorumlusu, satış danışmanı ve iletişim danışmanı) çalışan bulunmaktadır. Başlangıç örnekleminde yer alan 29 takım arasından iki takım ilerleyen bölümlerde açıklanan nedenlerle hipotezlerin test edildiği analizlere dahil edilmemiştir. Katılımcıların % 62.5'i (N = 80) kadın, % 34.40'ı (N = 44) erkek ve kalan katılımcılar cinsiyetlerini belirtmemişlerdir. Katılımcıların yaş aralığı 18 ve 42 arasındadır. Katılımcıların mevcut mağazalarındaki görev süreli 1 ve 87 (O =13.41, SS = 15.01) ay arasında değişmektedir.

Veri Toplama Araçları

Kişilik Ölçeği

Beş kişilik faktörü (Sorumluluk Bilinci, Uyumluluk, Nörotisizm, Deneyime Açıklık ve Dışadönüklük) Benez-Martinez ve John (1998) tarafından geliştirilen ve Demir (2012) tarafından Türkçe' ye adaptasyonu yapılan 47 maddeden oluşan envanter aracılığı ile ölçülmüştür. Maddeler 5-basamaklı Likert tipi ölçek (1 = Kesinlikle katılmıyorum, 5 = Kesinlikle katılıyorum) üzerinde değerlendirilmiştir. Mevcut araştırmada, Deneyime Açıklık (α = .82), Nörotisizm (α = .81) ve Dışadönüklük (α=.79) faktörleri yeterli iç tutarlılık katsayısına sahip iken, Sorumluluk Bilinci (α=.69) ve Uyumluluk (α=.66) faktörlerinin güvenirlilik değerleri istenilen değerin biraz altında bulunmuştur.

Güven, İşbirliği, Başarı Kazanma Güdüsü ve Yakınlık Kişilik Alt Boyutları

Uyumluluk faktörünün Güven ve İşbirliği alt boyutları, Sorumluluk Bilinci faktörünün Başarı Kazanma Güdüsü alt boyutu ve Dışadönüklük faktörünün Yakınlık alt boyutu Uluslararası Kişilik Madde Havuzundan (IPIP, Goldberg, 1999) alınan 40 madde ile ölçülmüştür. Ölçek maddeleri mevcut araştırma kapsamında Türkçe'ye çevrilmiştir.Çevirilerde kavramsal denkliğin sağlanması esas olarak alınmıştır.. Her bir alt boyutu ölçen 10 maddeye açımlayıcı faktör analizi yapılmış ve .30'un altında faktör yüküne sahip maddeler elenmiştir. Faktör analizleri sonucunda, Yakınlık alt boyutundan iki madde, İşbirliği alt boyutundan üç madde, Başarı Kazanma Güdüsü alt boyutundan iki madde ve Yakınlık alt boyutundan üç madde ilgili ölçeklerden çıkarılmıştır. Yapılan güvenirlik analizi sonucunda, İşbirliği (α=.73) ve Güven (α=.73) alt boyutları yeterli iç tutarlılık katsayısı sahip olduğu, Başarı Kazanma Güdüsü (α=.65) ve Yakınlık (α=.66) alt boyutlarının güvenirlilik değerlerlerinin ise istenilen değerin biraz altında oluğu bulunmuştur.

Takıma Yönelik OZM ve Göreve Yönelik OZM Ölçümü: Örtük Yaklaşım

Bu araştırmada, takıma ve göreve yönelik kavramların belirlenmesi için öncelikle söz konusu takımlar için bir görev analizi yapılmıştır. Örneklem içinde bulunan takımlar tarafından yürütülen görevleri ve bu takımların dahil oldukları süreçleri tespit edebilmek için görüşme ve anket yöntemleri kullanılmıştır. Görüşme ve anket uygulamalarından sonra her bir takımda var olan üç temel pozisyon için ortak olan, takıma yönelik ve göreve yönelik yedişer kavram tespit edilmiştir. Müşteri karşılama, uğurlama, şikayeti çözme, talebi öğrenme, evrak düzenleme, ürün tanıtma ve işlem takibi göreve yönelik kavramlar olarak tespit edilmiştir. Koordineli araştırma, bilgi alışverişi, destek olma ve ağızbirliği yapma takıma yönelik kavramlar olarak tespit edilmiştir. Bu kavramlara ek olarak ortaklaşa sorun çözme, takım ruhu, yol gösterme/rehberlik etme kavramları daha önceki OZM araştırmalarından (Mathiue ve ark., 2000) ve takım alanyazınından (Rousseau, Aube ve Savoi, 2006) alınmıştır.

Takıma ve göreve yönelik zihinsel modelleri ortaya çıkarmak için, katılımcılardan yedi görev ve yedi takım kavramlarından oluşan her bir çiftin ilişkililiğinin 9'lu Likert tipi ölçek üzerinden 1(Hiç İlişkili Değiller) ve 9 (Oldukça İlişkililer) arasında değerlendirmeleri istenmiştir. Takıma ve göreve yönelik zihinsel modelleri temsil etmek için Pathfinder (www.interlinkinc.com) programı kullanılmıştır. İlgili kavramlar arasında

dolaylı ya da direk bağlantılar oluşturan Pathfinder programı (Schvaneveldt, 1990), her bir katılımcı için, biri takıma yönelik diğeri ise göreve yönelik olmak üzere iki tane ağ oluşturmuştur. Pathfinder her bir ağı birbirleri ile karşılaştırarak benzerlik değeri hesaplamaktadır. Bu değer, OZM benzerliğinin bir indeksidir. Mevcut araştırmada, her bir takımın göreve yönelik OZM değerlerini hesaplamak için, ilgili takımın üyelerinin göreve yönelik ağları ikili olarak karşılaştırılmıştır. İkili karşılaştırmadan elde edilen benzerlik değerlerinin ortalaması ilgili takımın göreve yönelik OZM değeri olarak alınmıştır. Aynı adımlar takıma yönelik OZM değeri hesaplamak için de takip edilmiştir.

Takım Değerlendirme ve Tanımlama Aracı (TDTA): Açık Yaklaşım

Takım ortak zihinsel modelini anket yöntemi ile ölçmek maksadıyla Johnson ve arkadaşları tarafından geliştirilen (2007) Takım Değerlendirme ve Tanımlama Aracı (TDTA) kullanılmıştır. Ölçeğin Türkçe adaptasyonu Johnson, Top ve Yükselturk (2011) tarafından yapılmıştır. Mevcut araştırmada 42 madde olan ölçeğin 15 maddelik kısa versiyonu (Skorski, 2009) kullanılmıştır. Ölçekte, her bir takım üyesinden kendi takımını 5'li Likert tipi ölçek üzerinde (1 = Kesinlikle katılmıyorum; 5 = Kesinlikle katılıyorum) değerlendirmesi istenmektedir. Mevcut araştırmada, ölçeğin iç tutatarlılık katsayısı .94 olarak bulunmuştur.

Performans Ölçümü

GSM firması örnekleme dahil edilen tüm mağazalarda performansa dayalı prim sistemi uygulamaktadır. Beş ayrı performans kalemi bulunmaktadır. Bunlar, faturalı hat satışı, hazırkart satışı, başka operatörlerden geçiş, faturalı hatta geçiş ve internet satışıdır. Her bir satış kaleminde verilen hedefi tutturan mağazalar, o satış kaleminden prim almaktadır. GSM firması mağazalara aylık hedef belirlemekte, mağazalar ise bu hedefleri çalışanlarının bireysel hedefi olarak dağıtmaktadır. Bir takım olarak mağaza hedefini tutturduğu durumda mağaza GSM firması tarafından ödüllendirilmektedir. Takım içerisinde ilgili ay için belirlenen hedeflerini yakalama düzeylerine göre çalışanlar da prim almaktadırlar. Katılımcıların önemli bir kısmının üç aydan fazla (% 16. 4) deneyiminin olmamasından dolayı, mevcut araştırmada Aralık 2013 performans değerlendirme sonuçları performans ölçümü olarak kullanılmıştır. Beş performans kaleminden genel bir performans değerine ulaşmak için uzmanlardan bu beş kalemi

takımın performans göstergesi olma düzeylerine göre ağırlıklandırmaları istenmiştir. Mevcut araştırmada, her bir takımın performans puanı olarak, ağırlıklandırılmış performans değerleri kullanılmıştır.

Takım Sürdürebilirliği Ölçeği

Takım sürdürebilirliği, Hackman (1988) tarafından geliştirilen ve bu araştırma için Türkçeye çevrilen yedi madde ile ölçülmüştür. Katılımcılardan, ifadelere katılım düzeylerini 5-basamaklı Likert tipi bir ölçek üzerinde (1 = Kesinlikle katılmıyorum, 5 = Kesinlikle katılıyorum) göstermeleri istenmiştir. Mevcut araştırmada, ölçeğin iç tutarlılık katsayısı .78 olarak bulunmuştur.

Takım Potansiyeli Ölçeği

Takım üyelerinin mevcut takımların potansiyeline yönelik algıları Guzzo ve arkadaşları tarafından geliştirilen (1993) ve bu araştırma için Türkçe'ye çevrilen yedi madde ile ölçülmüştür. Katılımcıların ifadelere katılım düzeyleri 5-basamaklı Likert tipi bir ölçek (1 = Kesinlikle katılmıyorum, 5 = Kesinlikle katılıyorum) ile ölçülmüştür. Mevcut araştırmada, ölçeğin iç tutarlılık katsayısı .82 olarak bulunmuştur.

İşlem

Her bir takım mağazalarında ziyaret edilmiştir. Araştırma verilerinin çoklu seviyeli (seviye 1: çalışan, seviye 2: takım) analiz edilecek olmasından dolayı ilgili mağazalarda bir aydan az deneyimi olan çalışanlar mevcut araştırmaya dâhil edilmemiştir. Katılımcıların bilgilendirilmiş onamı alındıktan sonra, ölçekler uygulanmış ve bu uygulama yaklaşık 10-15 dakika sürmüştür.

Veri Kümeleme

Araştırmanın verilerinin birçoğunun bireysel düzeyde toplanmasına karşın hipotezler takım düzeyinde kurulmuştur. Bu nedenle, bireysel seviyedeki verilerin, takım düzeyinde kümelenmesi gerekmiştir. Kümeleme öncesinde, takım üyelerinin ilgili değişkenlerde hemfikir olup olmadıklarının tespit edilmesi gerekmektedir. Bu amaçla rwg(j) indeksi, (James, Demaree, & Wolf, 1984; 1993) ve sınıf içi korelasyon ICC(1) değerleri hesaplanmıştır. Takım potansiyeli (F (26, 101) = 2.06, $p < .01$), takım

sürdürebilirliği (F (26, 101) = 2.19 , $p < .01$) ve OZM (F (26, 101) = 1.97, $p < .01$) için yapılan tek yönlü ANOVA sonuçları anlamlı bulunmuştur. ICC (1) değerleri, James (1982) tarafından rapor edilen .12 ortanca değerinin üzerinde olmasından dolayı, takım potansiyeli (.19), takım sürdürebilirliği (.17) ve OZM (.16) için yeterli bulunmuştur. Sonuç olarak, bu değişkenler için bireysel toplanan verinin takım düzeyine birleştirilmesi (kümelenmesi) mümkün olabilmiştir.

Veri kümeleme yöntemi olarak, takım potansiyeli ve takım sürdürebilirliği için takım üyelerinin ortalama değerleri kullanmıştır. OZM değerlerini kümelemek için üç farklı hesaplama yapılmıştır. Öncelikle takım üyelerinin ilgili değişkendeki ortalama değeri, sonra standart sapmanın bir eksiği ve son olarak rwg hesaplamaları yapılmıştır. Bireysel düzeydeki kişilik değerleri takım düzeyine çevirirken, takım üyelerinin ilgili değişkendeki ortalamaları ve varyans değerleri kullanılmıştır.

BULGULAR

Araştırma Değişkenleri Arasındaki Korelasyonlar

İstatistiksel güç elde edebilmek için, örneklem büyüklüğü (Cohen, 1988) önemli görülmektedir. Mevcut araştırmanın takım düzeyindeki örnek sayısının düşük olmasından dolayı, anlamlılık seviyesi .10 olarak belirlenmiştir. Tablo 2 hipotez edilen değişkenler arasındaki korelasyonları özetlemektedir. Tabloya bakıldığında, açık ve örtük OZM ölçümlerinin birbirleri ile ilişkili olmadıkları görülmektedir. Bu sonuç hipotezlerin açık ve kapalı OZM ölçümleri için ayrı ayrı test edilmesini zorunlu kılmıştır. Açık OZM hesaplaması için kullanılan üç farklı yöntemin aralarındaki korelasyonlara bakıldığında, bu üç farklı hesaplama yöntemlerinin oldukça ilişki oldukları bulunmuştur. Rwg hesaplamaları tepki yanlılığını kontrol edebildiğinden (James et al., 1984), açık OZM değeri olarak, takımların rwg değerinin kullanılmasına karar verilmiştir.

OZM Öncülerine Yönelik Hipotezlerin Testi

Üç farklı OZM (Takıma yönelik OZM, Göreve yönelik OZM, Açık OZM Ölçümü) ölçümünü yordayan bir seri hiyerarşik regresyon analizi yapılmıştır. Takım alanyazınına dayanarak, takım büyüklüğü ve ortalama takım görev süresi regresyon analizinde kontrol değişkenleri olarak kullanılmıştır. Regresyon analizleri sonuçlarında,

takım büyüklüğü (β = -.43, $p < .05$) takıma yönelik OZM ile negatif yönde ilişkili ve takım ortalama görev süresi (β = -.50, $p < .01$) ise açık OZM ölçümü ile negatif yönde ilişkili bulunmuştur. Uyumluluk kişilik faktörü (H1a) ve OZM arasındaki ilişkiye bakıldığında, Uyumluluk faktörünün takıma yönelik OZM (β =.42, $p < .05$) ve göreve yönelik OZM (β =.47, $p < .05$) ile ilişkili olduğu bulunurken, açık OZM ölçümü ile ilişkili bulunmamıştır. Bu nedenle, Hipotez 1a kısmi olarak desteklenmiştir.

Güven kişilik boyutu (H1b) ve OZM arasındaki ilişkiye bakıldığında, Güven boyutu, takıma yönelik OZM (β = -.37, $p = .11$), göreve yönelik OZM (β =-.29, *ns*) ve açık OZM ölçümü (β = -.19, *ns*) ile ilişkili bulunmamıştır. Bu nedenle Hipotez 1b, hem örtük hem de açık OZM ölçümleri için desteklenmemiştir. Güven boyutuna yönelik beklenmedik bu bulguyu anlayabilmek için, keşfedici bir amaçla, takım güven varyansının OZM ile olan ilişkisine bakılmıştır. Regresyon sonuçlarına bakıldığında, takım Güven varyansının açık OZM ölçümü (β =-.42, $p \leq .01$) ile negatif yönde ilişkili olduğu bulunurken, takıma yönelik OZM (β =-.30, $p = .14$) ve göreve yönelik OZM (β =-.21, $p = .28$) ile ilişkili bulunmamıştır.

İşbirliği boyutu (H1c) ve OZM arasındaki ilişki incelendiğinde, işbirliği boyutunun, takıma yönelik OZM (β = .33, $p \leq .07$) ve göreve yönelik OZM (β =.44, $p \leq .05$) ile ilişkili olduğu bulunurken, açık OZM ölçümü (β = -.02, *ns*) ile ilişkili olmadığı bulunmuştur. Bu durumda, Hipotez 1c örtük OZM ölçümleri için desteklenirken açık OZM ölçümü için desteklenmemiştir.

Dışadönüklük (H2a) kişilik faktörü ve OZM arasındaki ilişkiye baktığımızda, Dışadönüklük faktörü, takıma yönelik OZM (β = -.02, *ns*), göreve yönelik OZM (β = -.08, *ns*) ve açık OZM ölçümü (β = -.20, *ns*) ile ilişkili bulunmamış ve Hipotez 2a desteklenmemiştir. Dışadönüklük kişilik faktörüne yönelik beklenmedik bu bulguyu anlayabilmek için, keşfedici bir amaçla, ilgili faktör ve OZM arasında kübik bir ilişki test edilmiştir. Sonuçlara bakıldığında, Dışadönüklük (β = -.39, $p < .10$) ve göreve yönelik OZM arasında kuadratik bir ilişki bulunmuştur.

Yakınlık kişilik boyutu (H2b) ve OZM arasındaki ilişkiye baktığımızda, Yakınlık boyutu, takıma yönelik OZM (β = .04, *ns*), göreve yönelik OZM (β = .15, *ns*)ve açık OZM ölçümü (β = -.10, *ns*) ile ilişkili bulunmamıştır. Bu nedenle Hipotez 2b, hem örtük

hem de açık OZM ölçümleri için desteklenmemiştir. Yakınlık boyutuna yönelik beklenmedik bu bulguyu anlayabilmek için, keşfedici bir amaçla, takım Yakınlık varyansının OZM ile olan ilişkisine bakılmıştır. Regresyon sonuçlarına bakıldığında, takım Güven varyansının takıma yönelik OZM (β =-.35, $p \leq .10$), göreve yönelik OZM (β =-.36, $p \leq .10$) ve açık OZM ölçümü (β = -.37, $p \leq .05$) ile negatif yönde ilişkili olduğu bulunmuştur.

Sorumluluk Bilinci (H3a) kişilik faktörü ve OZM arasındaki ilişkiye bakıldığında, Sorumluluk Bilinci faktörü, takıma yönelik OZM (β =.10, *ns*), göreve yönelik OZM (β = .32, p =.12) ve açık OZM ölçümü (β = .19, *ns*) ile ilişkili bulunmamış ve Hipotez 3a desteklenmemiştir. Başarı Kazanma Güdüsü boyutu (H3b) ve OZM arasındaki ilişki incelendiğinde ise, Başarı Kazanma Güdüsü boyutunun göreve yönelik OZM (β = .35, $p \leq .10$) ile ilişkili olduğu bulunurken, takıma yönelik OZM (β = .25, *ns*) ve açık OZM ölçümü (β = .10, *ns*) ile ilişkili olmadığı bulunmuştur. Bu durumda, Hipotez 3b kısmi olarak desteklenmiştir.

OZM'nin Sonuçlarına Yönelik Hipotezlerin Testi

OZM'nin sonuçlarına yönelik de bir seri Hiyerarşik Regresyon analizi yapılmıştır. Göreve yönelik OZM (H4) ve takım performansı arasındaki ilişkiye baktığımızda, göreve yönelik OZM ile takım performansı (β = -.34, $p \leq .10$) arasında negatif yönde ilişki bulunmuş ve Hipotez 4 desteklenmemiştir. OZM' nin 3 farklı ölçümü (H5) ve takım sürdürebilirliği arasındaki ilişkiye baktığımızda, ortalama görev süresi kontrol edildikten sonra, göreve yönelik OZM (β = .39, $p \leq .05$), takıma yönelik OZM (β = .38, $p \leq .10$) ve açık OZM (β = .63, $p \leq .01$) ölçümü takım sürdürebilirliği ile pozitif yönde ilişkili olarak bulunmuş ve Hipotez 5 desteklenmiştir. OZM' nin 3 farklı ölçümü (H5) ve takım potansiyeli arasındaki ilişkiye baktığımızda ise, ortalama görev süresi kontrol edildikten sonra, takıma yönelik OZM (β = .33, $p \leq .10$) ve açık OZM ölçümü (β = .73, $p \leq .01$) ile pozitif yönde ilişkili olarak bulunmuş fakat göreve yönelik OZM ile ilişkili bulunmamıştır. Bu nedenle, Hipotez 6 kısmi olarak desteklenmiştir.

TARTIŞMA

Mevcut çalışma servis takımları için OZM'nin öncülerini ve sonuçlarını bir alan çalışması kapsamında incelemeyi hedeflemiştir. OZM'nin öncülerine yönelik bulgular

değerlendirildiğinde, Uyumluk faktörü ve OZM arasındaki pozitif yönde ilişki alınyazınyla uyumlu niteliktedir. Uyumlu insanların işbirliği ve kişilerarası etkileşim gerektiren görevlerde daha etkin olmalarının beklenmesi sebebiyle (LePine ve Van Dyne, 2001) bu bulgu şaşırtıcı değildir. Uyumluluk faktörünün alt boyutlarından Güven boyutuna yönelik bulgular beklenen hipotezi desteklemiştir.

Beklenenin aksine güven boyutu ve OZM arasında negatif bir ilişki trendi bulunmuştur. Beklenmedik bu bulgunun Fisher ve arkadaşlarının (2012) çalışmasıyla uyumlu olduğu gözlemlenmiştir. Genel olarak pozitif çıktılarla ilişkilendirilen güven duygusuna yönelik, Langfred (2004) takım üyeleri arasındaki fazla güven duygusunun olası negatif sonuçları olduğunu vurgulamaktadır. Langfred yüksek güven duygusunun yüksek özerklikle birleştiği durumda takım üyelerinin daha az gözetleme davranışı sergileyeceğini ve bu durumun performansta düşüşe neden olabileceğini belirtmektedir. Çalışma hipotezleri içerisinde yer almamasına karşın, bu beklenmedik bulguyu daha iyi anlayabilmek için güven boyutunda takım üyelerinin heterojen olmalarının OZM ile ilişkisi test edilmiştir. Bu ilişkiye yönelik bulgu takım üyeleri arasında güven duygusunun yüksek olmasının değil aslında takım üyelerinin güven seviyelerin benzer olmasının takımlarda OZM gelişimi için önemli olduğunu göstermiştir. İşbirliği boyutunun OZM gelişimindeki rolü değerlendirildiğinde, elde edilen bulgular beklenen yönde olmuştur. Grup taleplerine kendi arzularından daha fazla önem vermelerinden (Wagner, 1995) ve pozitif kişilerarası etkileşim sergilemelerinden dolayı takım üyelerinin işbirlikçi olmaları takımlarda OZM oluşumunu kolaylaştırmaktadır.

Dışadönük takım üyelerinden oluşan takımların daha çok OZM'e sahip olması beklenirken, ilgili hipotez desteklenmemiştir. Bireysel Dışadönüklük ve takım Dışadönüklük kompozisyonun etkileşimi beklenmedik bu sonucu açıklayabilmektedir. Örneğin, çalışma bulguları fazla sayıda dışadönük takım üyesine sahip takımlarda dışadönük üyelerin daha çok "üretim karşıtı" davranışlar sergilediği bulunmuştur (Schmidt, Ogunfowara ve Bourdage, 2012). Beklenmedik bu bulguyu daha iyi anlayabilmek için dışadönüklük faktörü ve OZM arasındaki kuadratik ilişki test edilmiştir. Sonuçlar, dışadönüklük faktörü ve göreve yönelik OZM arasındaki kuadratik ilişkinin anlamlı olduğunu göstermiştir. Sonuç olarak, orta derecede dışadönük takım

üyelerine sahip takımların düşük ve yüksek derecede Dışadönük takım üyelerine sahip takımlara göre daha çok OZM sahibi olması daha olasılıklı bulunmuştur.

Mevcut çalışma bulguları, Sorumluluk Bilinci kişilik faktörü ve OZM arasında beklenen pozitif ilişkiyi desteklememiştir. Sorumluluk Bilinci alt boyutlarının farklı ilişkiler sergilemelerinin bu durumu açıklayabileceği düşünülmektedir. Özellikle, alınyazınında farklı yordayıcılarla ilişkilendirilen başarı ve vazifeşinaslık (dutifulness) alt boyutlarının OZM ile de farklı bir ilişki sergilemeleri olasılıklı olarak düşünülmüştür. Resick (2010) başarı alt boyutunun OZM gelişimine katkı sağlarken vazifeşinaslık alt boyutunun OZM ye zarar verebileceğini vurgulamıştır.

Sorumluluk Bilinci alt boyutlarından Başarı Kazanma Güdüsü ve OZM arasında beklenen pozitif ilişki çalışma bulguları tarafından sadece göreve yönelik OZM için desteklenmiştir. Başarı odaklı kişilerin öncelikli olarak göreve odaklandıkları (Hough, 1992) göz önüne alındığında, bu bulgu şaşırtıcı değildir.

OZM sonuçlarına yönelik bulgular değerlendirildiğinde, göreve yönelik OZM ve takım performansı arasında beklenenin aksine negatif bir ilişkinin olduğu tespit edilmiştir. Takım performansı ile pozitif ilişki rapor eden alınyazınla farklı bir sonuca ulaşılmasını, çalışmanın bağlamıyla ilgili olabileceği koşullarının (laboratuar ya da saha) farklı olmasının açıklayabileceği düşünülmüştür. Ayrıca, mevcut çalışma zihinsel model içeriği olarak satış sürecinin içinde yer alan görevleri tespit etmiştir. Fakat bu görevlerin dışında örneğin müşteri talebini karşılamanın en etkili yolları gibi farklı zihinsel model içeriklerinin de takım performansı ile ilişkili olma olasılığı olduğu düşünülmüştür. Bunun yanında, mağaza satışlarının takım ve takım üyelerinin özelliklerinin ötesinde yeni ürün iç pazarlama, kontrol (Hultink & Atuahene-Gima, 2000) gibi faktörlerle alakalı olmasının da olasılıklı olduğu düşünülmüştür. Çalışma bulguları OZM ve takım sürdürebilirliği ve takım potansiyeli arasında pozitif bir yönde ilişki olduğunu göstermektedir. Çalışma bulguları değerlendirildiğinde üyelerinin göreve ve takıma yönelik ortak anlayışa sahip takımların kendi takımlarını sürdürebilir ve potansiyel olarak değerlendirdikleri görülmektedir.

Çalışma bulgularında açık ve örtük OZM ölçümlerinin öncüler ve sonuçlarla farklı ilişkiler sergiledikleri görülmüştür. Bu bulgu DeChurch ve Mesner-Magnus'un (2010) meta analizi ve Resick ve arkadaşlarının (2010) çalışma bulgularını destekler niteliktedir. DeChurch ve Mesner-Magnus ilişkisellik değerlendirmesinin zihinsel model yapısını, geleneksel değerlendirme biçiminde olan anketlerin ise zihinsel model içeriğini temsil ettiğini belirtmektedirler. Mevcut çalışma bulgularına göre, kişilik faktörlerinin/alt boyutlarının ortalama değerleri açık OZM ölçümü tarafından yordanmazken, varyans değerleri tarafından yordanmaktadır. Bulgular değerlendirildiğinde, varyans değerlerinin hem zihinsel model içeriği hem de yapısıyla ilişkili olduğu sonucuna ulaşılabilmektedir.

Çalışmanın Potansiyel Katkıları ve Doğurguları

Mevcut çalışmanın birçok açıdan takım ve OZM alınyazınına katkı sunma potansiyelinde olduğu düşünülmektedir. Öncelikle çalışma bulguları takım kişilik oluşumlarının takım içinde OZM gelişimininde nasıl etkili olduğunu göstermiştir. Ayrıca kişilik araştırmalarında alt boyut incelemesinin ve farklı takım düzeyi kişilik oluşum yöntemlerinin (ortalama ve varyans) kullanımının önemini ortaya koymuştur. Mevcut çalışma OZM kavramını gerçek takım ortamlarında inceleyerek alınyazınına katkı sağlamıştır. Mevcut çalışmada performans ölçümü olarak GSM firması tarafından kullanılan gerçek satış rakamları ve hedef tutturma yüzdeleri kullanılmıştır. Bu durumun, çalışma bulguların dışsal geçerliğini desteklediği düşünülmektedir.

Çalışma bulgularının takım yönetim uygulamaları açısından önemli doğurguları bulunmaktadır. Takım OZM gelişiminde söz konusu kişilik faktörlerinin ve alt boyutlarının etkili olduğu bulguları göz önüne alındığında insan kaynakları uzmanlarının uyumlu, işbirlikçi, başarı kazanma güdülü, yakın ve güven dolu çalışanları personel seçimi aracılığıyla firmalarına dahil etmeleri önerilmektedir. Bir diğer taraftan OZM'in takım sürdürebilirliği ve potansiyeli ile pozitif yönde ilişki olduğu düşünüldüğünde, hizmet içi OZM gelişimi için takım geliştirme etkinliklerinin önemi ortaya çıkmaktadır. Takım etkileşim eğitimi (Marks et al., 2000), çapraz eğitim (Marks et al., 2002) gibi OZM gelişimini kolaylaştıracak eğitim programlarının düzenlemesi takımların etkililiğine katkı sağlayacaktır.

Çalışma Sınırlılıkları ve Öneriler

Saha çalışmalarının birçoğunda da görüldüğü gibi mevcut çalışma küçük bir örneklem üzerinde yapılmıştır. Ayrıca kişilik, takım sürdürebilirliği, potansiyeli değişkenlerinin aynı yöntemle ölçülmesinden dolayı ortak yöntem yanılgısı söz konusudur.

OZM alanında yapılacak gelecek çalışmalarda, takım kişiliğinin takım bilişini etkileme mekanizmasının incelenmesi gerekmektedir. Ayrıca, takım içi bağımlılık, eğitim, liderlik (Kozlowski ve Ilgen, 2006) gibi takım girdilerinin OZM ile olan ilişkilerinin araştırılması da oldukça gereklidir. Zihinsel model benzerliği ve doğruluğunun birçok çalışmada farklı yordayıcılarının olduğu göz önüne alındığında gelecek çalışmalarda her iki zihinsel model tipi için ayrı ayrı *öncüler* ve *sonuçlar* incelemesi yapılmalıdır.

Appendix R: Tez Fotokopisi İzin Formu

TEZ FOTOKOPİSİ İZİN FORMU

ENSTİTÜ

Fen Bilimleri Enstitüsü ☐

Sosyal Bilimler Enstitüsü ☐

Uygulamalı Matematik Enstitüsü ☐

Enformatik Enstitüsü ☐

Deniz Bilimleri Enstitüsü ☐

YAZARIN

Soyadı : Karanfil
Adı : Derya
Bölümü : Psikoloji

TEZİN ADI (İngilizce) : Antecedents and Consequences of Shared Mental Model for Service Teams

TEZİN TÜRÜ : Yüksek Lisans ☐ Doktora ☐

1. Tezimin tamamından kaynak gösterilmek şartıyla fotokopi alınabilir. ☐
2. Tezimin içindekiler sayfası, özet, indeks sayfalarından ve/veya bir bölümünden kaynak gösterilmek şartıyla fotokopi alınabilir. ☐
3. Tezimden bir (1) yıl süreyle fotokopi alınamaz. ☐

TEZİN KÜTÜPHANEYE TESLİM TARİHİ: