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A competency model for dispersed military team and role of
competencies on work engagement and career competencies

Bahadır YALÇIN

A thesis presented in partial fulfillment of the requirements for the degree of Doctor in
Management / Human Resources and Organizational Behavior

Supervisor:

Ph.D., Silvia Costa Agostinho da Silva, Associate Professor
University Institute of Lisbon, ISCTE-IUL

December, 2017

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A competency model and role of competencies on work engagement and career competencies

ABSTRACT

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ABSTRACT

Human assets are important resources available to any organization, being essential for performance. Therefore, the demand for effective workforce, who are competent, engaged, and proactive, increases in nonmilitary and military organizations.

This thesis focuses on leadership competencies required to command a dispersed military team (DMT) and role of leadership competencies on work engagement and career competencies. We conducted two studies. In the first study, we developed a DMT competency model, consisting of ten core, five leadership and five membership competencies.

In the second study, we investigated the role of competencies on work engagement and on career competencies by using Job Demands-Resources model and career competencies model as theoretical framework. We focused on leadership competencies defined in our prior study. Firstly, we investigated the relationship between these competencies, and work charactersitics - job demands and resources - and work engagement. Secondly, we investigated the effect of leadership competencies on career competencies.

Results showed that competencies displayed a significant positive relationship with role clarity, positive relationship with possibilities for development and negative relationship with social support; a negative relationship with role conflict and work overload; and a significant positive relationship with work engagement, in addition, role clarity mediated the relationship between competencies and work engagement. Regarding the role of competencies on career competencies, we observerved a significant positive relationship between competencies and career competencies. Overall, our results indicated that mastering on competencies affects the perception of work conditions, contributes for higher levels of engagement through perception of role clarity and leads to development of career competencies.

A competency model and role of competencies on work engagement and career competencies

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RESUMO

A competency model and role of competencies on work engagement and career competencies

RESUMO

O capital humano constitui um recurso muito importante disponível para qualquer organização, sendo fundamental para o seu desempenho. Por este motivo, a necessidade de uma força de trabalho eficaz, competente, envolvida e proactiva, tem aumentado em organizações não militares e militares.

Esta tese foca as competências de liderança necessárias para comandar uma equipa militar dispersa (EMD) e o papel das competências de liderança no engagement no trabalho e competências de carreira. Nesse sentido foram realizados dois estudos. No primeiro estudo, desenvolvemos um modelo de competências EMD, constituído por dez competências principais, 5 de liderança e 5 de pertença a equipas.

No segundo estudo, investigámos o papel das competências no engagement no trabalho e nas competências de carreira utilizando o modelo das Exigências-Recursos e o modelo das Competências de Carreira como enquadramento teórico. Neste estudo considerámos as competências de liderança definidas no primeiro estudo e investigámos a relação entre estas competências e as características do trabalho – exigências e recursos- e o engagement no trabalho. Posteriormente investigámos a relação entre as competências de liderança e as competências de carreira.

Os resultados obtidos revelam que as competências apresentam: uma relação positiva significativa com a clareza de papel, possibilidades de desenvolvimento e uma relação negativa com o apoio social; uma relação negativa com o conflito no papel e a sobrecarga de trabalho; e uma relação positiva significativa com o engagement no trabalho, além disso, a clareza do papel revelou ser mediadora da relação entre as competências e o engagement no trabalho. Em relação ao papel das competências nas competências de carreira, verificámos uma relação positiva significativa entre as mesmas.

Globalmente, os nossos resultados sugerem que o domínio das competências afeta a perceção das condições de trabalho, contribui para maiores níveis de engagement pela sua influência na clareza de papel, e contribui para o desenvolvimento de competências de carreira.

Palavras-chave: Equipa Militar Dispersa; Modelo De Competências; Engagement No Trabalho; Competências de Carreira
JEL Sistema de classificação: I310, L2, O150

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GENERAL INTRODUCTION

GENERAL INTRODUCTION

Globalization and technologic developments have paved the way for geographically dispersed configuratations and emerged new team and leadership challenges. Geographically dispersed teams are groups of people with a common purpose who carry out interdependent tasks across locations and time, using technology to communicate (Segura, Sarkani & Mazzuchi, 2013). Organizations employ dispersed teams for a variety of purposes, such as tapping into far-flung talent, establishing a presence in different geographic regions, customizing products for different countries, and reducing costs (Ocker & Hiltz, 2012).

Given to their nature, these teams function in a geographically (i.e. physical distance, temporal distance, and configurational distance), demographically and culturally dispersed environment, and it has been convincingly shown that dynamics of dispersed environment affect teamwork, coordination mechanisms (shared mental models, communication and trust) and performance (Espinosa, Cummings & Pickering, 2012; Massey, Montoya-Weiss & Hung, 2003; Siebdrat, Hoegl & Ernst, 2014; Jehn, Northcraft & Neale, 1999; Liang, Liu, Lin & Lin, 2007; Daim et al., 2012; Segura et al., 2013).

One other important determinant of team performance in dispersed settings is team leadership (Ocker, Huang, Benbunan-Fich & Hiltz, 2011; Joshi, Lazarova & Liao, 2006; Muethel, Gehrlein & Hoegl, 2012). Although, dispersed team leaders have similar challenges as leaders of traditional teams; communication, decision making, conflict resolution, team identity, trust, collective efficacy, faultlines and emergence of informal leaders are cited as main leadership challenges peculiar to dispersed teams (Cramton, 1997; Bourgault, Drouin & Hamel, 2008; Ocker, Zhang, Hiltz & Ronson, 2009; Holahan, Mooney, Paul, Rahim & MA, 2011).

In line with civil organizations, in order to catch up with the rapid changes in the operational environment, dispersed teams has become commonplace in military settings (Goodwin & Halpin, 2006). Indicating that military leaders are face to face commanding teams, whose members are in different locations, different time zones, and which are composed of individuals from a range of cultures, backgrounds, states, nations and values.

Military teams are organized in a strong hierarchical structure and a major portion of the variance in performance reside in factors associated with leadership in these teams (Zaccaro, Rittman & Marks, 2001). Military leadership is defined as influencing people by providing purpose, direction, and motivation while operating to accomplish the mission and improving the organization (Army, 2006, p. 1-2), and at team level, leadership encompasses the commanding function which can be defined as directing, coordinating and using military force effectively (Howieson & Kahn, 2002). However, dispersed teams present some unique

challenges to exert influence over people (Yukl, 2002) such as communication, coordination, shared mental models and trust (Turcotte, Jobidon, Pigeon, Tremblay, 2014). Researchers, who focused on leadership effectiveness across geographical distance, stated that leaders face significant challenges in commanding, reducing ambiguity and managing/adopting heterogeneous cultures (Connaughton, Shuffler & Goodwin, 2011). Moreover, authors underlined the research that seeks to understand the specific leadership behaviors required in a dispersed environment that will facilitate effective team processes and performance.

Military jobs involve demanding physical and psychological work conditions (Krueger, 2001) and leadership behaviors contribute to followers' engagement through balancing the work conditions, namely, job demands and job resources (Breevaart, Bakker, Demerouti, Sleebos & Maduro, 2014; Fernet, Trépanier, Austin, Gagné, and Forest, 2015). However, to date, there is a paucity of research that has explored the role of required leadership behaviors on leaders' work engagement, which is the result of a motivational process developing depending on the perception of work conditions (Bakker & Demerouti, 2014), and on development of other proactive behaviors at work.

Human behavior is the result of an interaction of individual and environmental factors (Bandura, 1977). Essentially, researchers developed several studies in order to understand the interaction that would result in behaviors central to performance (See Figure 1.).
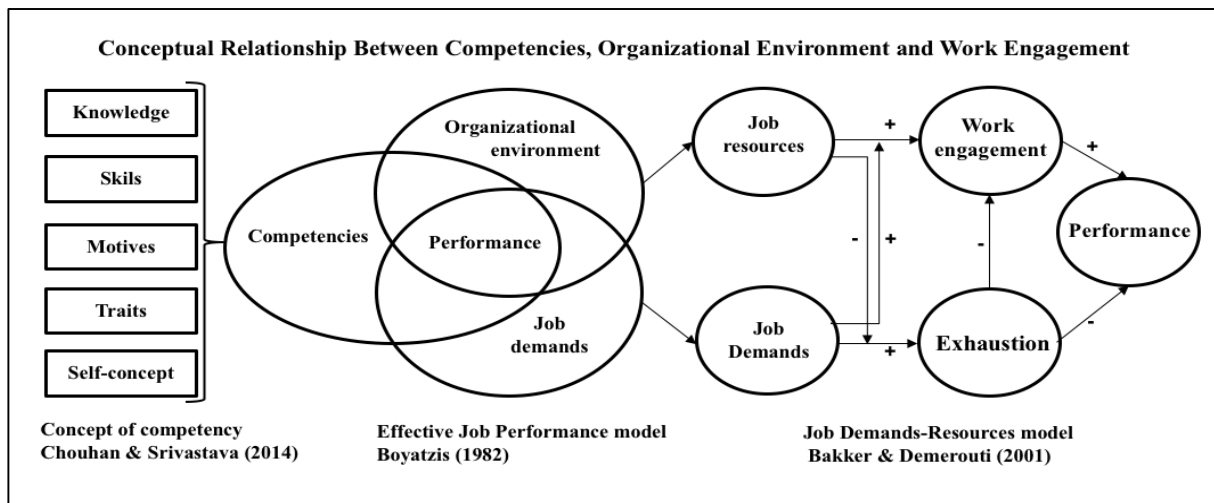
Figure 1.: Conceptual Relationship Between Competencies, Organizational Environment and Performance

The behaviors necessary for performance are conceptualized as competencies - namely a set of knowledge, skills and other characteristics like motives, traits, and self-concept (Spencer & Spencer, 1993; Chouhan & Srivastava (2014). Boyatzis (1982) proposed that maximum performance occurs when competencies fit with job demands and organizational environment.

Empirical studies showed that mastering on competencies effects not only job performance but also the perception of the organizational environment and demonstration of proactive behaviors (Dreyfus & Dreyfus, 1980; Lester, 2005, Cates, 2014). Recently, resarchers built the Job Demands and Resources (JD-R) model, and proposed that the perception of organizational environment in the form of job demands and job resources fosters performance through work engagement (Demerouti & Bakker, 2001). Further, Akkermans and his colleagues (2013a; 2013b) investigated the role of proactive behaviors central to career development in the JD-R model, and found that career competencies foster work engagement, and, in turn, performance.

In the view of these studies, we argued that competencies which fit with the organizational environment and the demands of dispersed work may facilitate DMT performance; in addition, mastering on these competencies may affect the perception of organizational environment, demonstration of proactive behaviors (i.e., career development), flourish work engagement, and, finally, foster leaders' performance.

Considering the state of art, we developed our thesis in the form of two studies, and aimed to answer two questions: in the first study, we investigated "What are the competencies that fit with the job demands and organizational environment of dispersed military teams?", and proposed a competency model; in the second study, we investigated "How mastering on proposed competencies affects work engagement and career development of leaders".

This dissertation is organized into three main parts: The first part focuses on identifying competencies required to command a dispersed military team, the second part focuses on the role of competencies on work engagement and on career competencies, and the third part focuses on general conclusion.

The first part consists of three chapters: after the introduction chapter (Chapter-1), Chapter-2 presents the literature and conceptual background focusing on geographically dispersed teams, dispersed teams in military organizations, partially dispersed/distributed teams (PDTs), characteristics of organizational environment of PDTs and how these characteristics affect team functioning, how faultlines occur and affect team functioning, leadership dynamics and challenges in PDTs, competency and competency modeling concept; and (Chapter-3) focuses on the first study which aimed to identify the leadership competencies required to command a dispersed military team, presents the goals of the study, the way which we followed in order to reach these goals, the results of the survey, and synthesis and discussion of the results.

The second part consists of two chapters: Chapter-4 presents the literature and conceptual

background focusing on JD-R theory, studies testing JD-R model, prior studies on work engagement in military context, career competencies, relationship between competency and components of JD-R Model; and Chapter-5 focuses on the second study which investigates the role of competencies on work engagement and on career competencies, presents the research question, hypotheses developing, hypotheses testing, results, and discussion of the results.

Final part (Chapter-6) begins with a summary of the research and continues with the main theoretical, empirical and practical implications as well as recommendation for future studies.

PART 1: COMPETENCIES REQUIRED TO COMMAND A DISPERSED MILITARY TEAM

CHAPTER 1: INTRODUCTION TO PART 1

INTRODUCTION TO PART 1

In the last years, there was a proliferation of geographically dispersed/virtual teams as well as an increase in research focusing the dynamics of these teams in nonmilitary and military organizations. However, to our knowledge, there is a paucity of research focusing on the leadership competencies for dispersed military teams.

Researchers agree that there are no major differences between geographically dispersed teams and collocated teams, and existing models designed to explain the dynamics of collocated teams can be applied to the mechanisms inherent in dispersed teams (Kossler, Hansen, Sessa & Prestridge, 2000; Siebdrat, Hoegl & Ernst, 2008), but leadership is particularly complex in dispersed teams and the outcome of dispersed team leadership issues impacts team dynamics and performance (Sessa,1999).

According to the literature, the complexity of dispersed team leadership takes its sources from the dimensions of dispersion that co-exists in a dizzying array of permutations and configurations, and leads to challenges and faultlines, which results with sub-group formation and in-group biases. (Lau and Murninghan 1998; Herbsleb & Grinter, 1999; Cramton, 2002; Staples & Zhao, 2006; Polzer, Crisp, & Kim, 2006; O'Leary & Cummings, 2007, 2010;; Shenkar, Luo & Yeheskel, 2008; Plotnick, Hiltz, Ocker, Rutkowski, Rosson, 2008; Ocker et al., 2011; Vangen & Winchester, 2014; Siebdrat et. al., 2014). In order to be successful, dispersed team leaders must assist the team in mitigating the negative effects of dispersion, in bridging the faultlines (Plotnick et al., 2008a), and in overcoming sub-group effects/biases and conflicts (Willis, 2010), however, leaders can do it if they have necessary competencies (Knowledge and skills) to meet the demands of the position (Asiwe, Hill & Jorgensen, 2015).

Although participants of this study are one of the European armed forces' dispersed military team staff, namely defense attaché teams and gendarmerie district commands/teams, the use of defense attaché teams and gendarmerie district commands/teams have been extended to many European countries (i.e. Portugal, Spain, and Italy).

This study investigates the leadership competencies required to command a dispersed military team. Considering the state of the art, this study is the first systematic effort to identify leadership competencies required to command a dispersed military team. In the following section we begin by presenting the conceptual background and literature review on dimensions of dispersion, leadership, faultlines, sub-group formation/effect and competency modeling. Then, we describe the research method and findings of our study concerning issues of leadership in dispersed military teams and competencies, and, finally, basing on our findings, we propose a competency model for dispersed military team.

CHAPTER 2: CONCEPTUAL BACKGROUND AND LITERATURE REVIEW ON DISPERSED TEAMS AND COMPETENCIES

2. CONCEPTUAL BACKGROUND AND LITERATURE REVIEW ON DISPERSED TEAMS AND COMPETENCIES

2.1. Geographically dispersed teams (GDTs)

The word team usually refers to a small task group in which the members have a common purpose, interdependent roles, and complementary skills. The extent to which members are collocate or geographically dispersed/virtual is one of the basis for describing teams (Yukl, 2006: 356). Different from co-located teams (CLTs), teams with members who work together in the same location (Yukl, 2006: 361), geographically dispersed teams (GDTs) are groups of people with a common purpose who carry out interdependent tasks across locations and time, using technology to communicate (Segura et al., 2013).

Researchers (Segura et al., 2013; Kossler et al., 2000) studying about GDTs have reached following common facts about these teams: They have common purpose; they work in different locations, depending to this fact, in different time zones and in different cultures; they use information technology; they carry out interdependent tasks. Kossler et al. (2000) studied about the major differences between GDTs and CLTs, and proposed three critical issues: There are no major differences between GDTs and CLTs; many of the successful team-building and developmental processes that already exist can probably be used, with some modification; to support GDTs, the skills necessary to effectively lead a CLT such as communication, project management, decision making/problem solving, ability to work with differences can also be used to lead a GDT, but what is needed is greater emphasis on the core competencies (for example, communication skills) that most effective leaders already possess. Siebdrat et al. (2008) supported this idea and proposed that dispersed teams do not require different models than collocated teams, existing models which are designed to explain the dynamics of collocated teams also apply to the mechanisms inherent in dispersed teams.

2.2. Dispersed teams in military organizations

Military organizations offer military capability required by the national defense policy and other services. These huge organizations are not only composed of collocated teams, but also "Geographically dispersed military teams (GDMTs)" with the characteristics of partially dispersed teams (PDTs), which is defined as a team consisting of at least two geographically distinct sites, with multiple members collocated at each site (Ocker et. al., 2009).

GDMTs have different dynamics from traditional teams. Structurally they have similarities with the collocated teams, but since they are geographically dispersed they are not

collocated teams; functionally they have many similarities with the fully dispersed/virtual teams, they coordinate their work predominantly with electronic information and communication technologies (e-mail, radio links, video-conferencing, etc.), but they are not virtual teams either. "Defense attaché teams (DATs)" and "Gendarmerie District Commands (GDCs)" are good examples of GDMTs with their PDT characteristics.

DATs perform representational functions and coordinates the collaboration activities related to defense and logistic on behalf of the armed forces. These teams are dispersed all around the world, have common purposes and interdependent performance goals, and use technology to communicate. Today, while states are represented by diplomatic missions in other countries, armed forces are represented by DATs, as well. For example; according to United States Defense Attaché System, Defense Attaché Offices (DAO) operate from U.S. Embassies in more than a hundred locations globally[1], one armed forces in Europe has more than eighty[2] and another armed forces in Europe has more than twelve[3] DAOs dispersed globally. Figure 2.1. demonstrates the imaginary organizational chart of defense attaché teams.
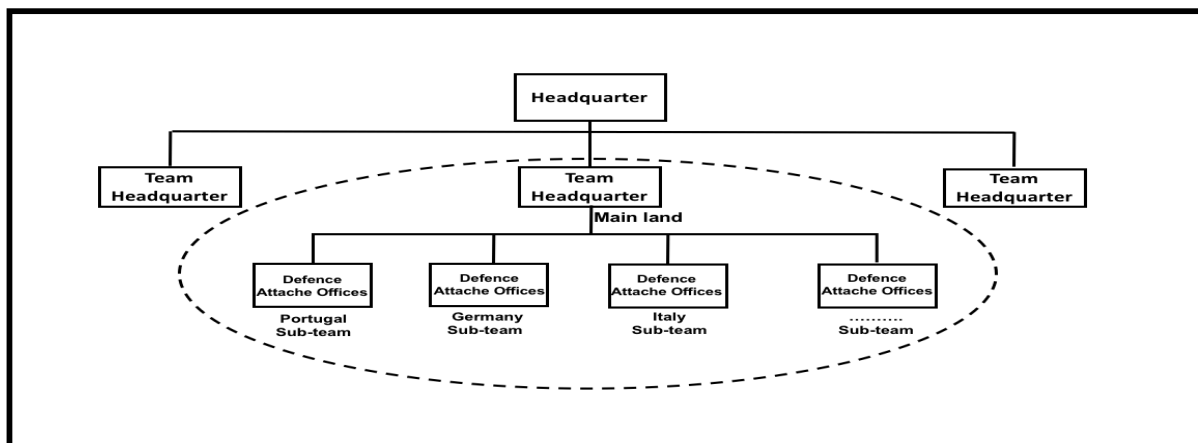
Figure 2.1.: Organizational Chart of Defense Attaché Teams (Possible Example)

The GDCs are the units established in order to carry out their duties of security and public order. These teams are dispersed all around a country, have common purpose and interdependent performance goals and use technology to communicate. More than seventy countries have gendarmerie organization in the world. Figure 2.2. demonstrates the imaginary organizational chart of Gendarmerie District Commands.

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[1] http://www.dia.mil/Training/JointMilitaryAttachéSchool%28JMAS%29.aspx. (29 October 2016)
[2] http://www.tsk.tr/UluslararasiIliskiler/Ataselikler (29 October 2016)
[3] http://www.fmn.dk/eng/allabout/Pages/Defenceattachesandmilitaryadvisers.aspx (29 October 2016)
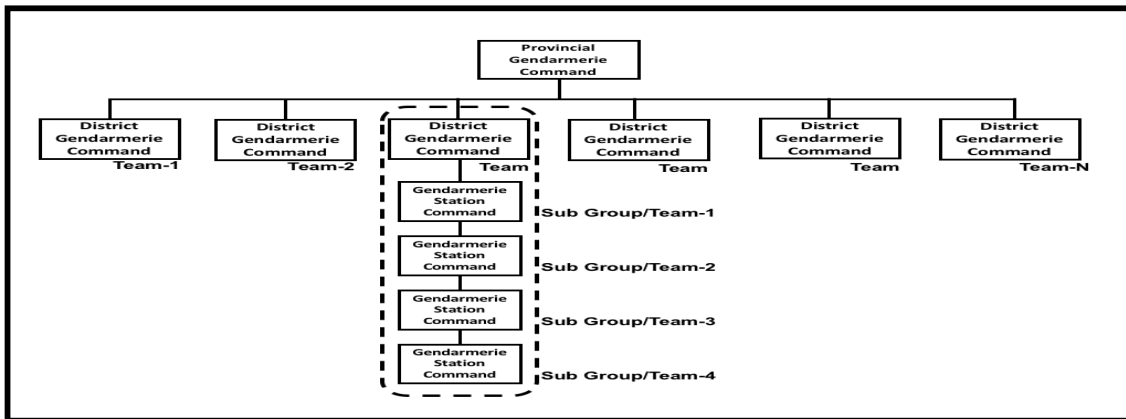
Figure 2.2.: Organizational chart of Gendarmerie District Commands (Possible Example)

DATs and GDCs carry the characteristics of PDT and function under the effects of dispersion. Commanding these teams have challenges stemming from their dispersed organizational environment.

2.3. Partially dispersed/distributed teams

One common configuration of dispersed teams is PDT, which can be defined as a team consisting of at least two geographically distinct sites, with multiple members collocated at each site (Ocker et. al., 2009). PDTs enable firms to take advantage of expertise around the globe; to continue work around the clock; and to create closer relationships with far-flung customers. PDTs come together in all shapes and sizes. Members of partially dispersed teams can be from many different places and cultures as well as have various experiences and motivations (Privman, Hiltz & Wang, 2013).

2.4. Characteristics of organizational environment of PDTs

Organizational environment of PDTs are complex and multiple faultlines co-exist in a dizzying array of permutations and configurations. They function under the effects of geographic, demographic and cultural dispersion in the presence of different national, organizational or site cultures all while working from different locations or time zones and likely also taking into account a diversity of different disciplinary backgrounds and expertise (Cramton, 2002; Ocker et al., 2011).

Authors who studied the dimensions of dispersion in teams (O'Leary & Cummings, 2007; Burke, Aytes, Chidambaram & Johnson, 1999; Segura et al., 2013) defined that geographic dispersion has three critical characteristics: (1) Spatial distance/physical distance, (2) temporal distance, and (3) configurational distance (O'Leary & Cummings, 2007); and demographic dispersion has three critical characteristics: (1) knowledge diversity, (2) social category

diversity and (3) value diversity (Segura et al., 2013). Besides these dimensions, Ocker et al. (2011) stated that cultural dispersion is another dimension of dispersion that influences interaction in dispersed teams.

2.4.1. Geographic dispersion

Geographic dispersion has three critical characteristics: (1) Spatial distance, (2) temporal distance, and (3) configurational distance.

Spatial separation is a key criterion to measure team dispersion, and can range from teams with all members located at the same place to teams where each team member is located in a different country (O'Leary & Cummings, 2007). Spatial dispersion refers to the objective distance among collocated team members or sub-teams within a dispersed team. Researchers (Cramton, 2002; Cramton & Hinds, 2004; 2005) stated that location has a multidimensional influence on dispersed work; differences in location result not just in geographic differences, but also time zone, organizational (e.g., different departments), and cultural differences (e.g., both national and office site cultures).

According to Ocker et al. (2011), members within a given sub-group of PDT which are physically collocated in different locations, typically enjoy more face-to-face interaction, share the same context and more common information with each other than they do with remote partners, and potentially develop a shared identity. Shared location provides a natural basis for the development of strong sub-group identities and strengthening local identifications which lead to a "faultline" for PDTs resulting with sub-group formation and in-group biases.

Temporal distance is highly related with geographic distance. Temporal distance is caused by differences in time zones among the places in which members work and also by the asynchronous interaction of team members (Ganesh & Gupta, 2010). Temporal distance may present a barrier that is more disruptive than physical distance alone (Plotnick, Ocker, Hiltz, Rosson, 2008b) and amplifies spatial separations, makes synchronous interaction less common and more difficult, and generally exacerbates the challenges of coordination (O'Leary & Cummings, 2007; Privman, 2009).

The most obvious effects of working in different time zones are decreased opportunity for synchronous communication, in another terms difficulty of members finding each other at the same time, and increased amount of time to accomplish interdependent work (Plotnick et al., 2008b). Even a small time difference reduces the overlap of work schedules across sites and impedes a team's ability for synchronous communication across sub-groups, resulting in reduced productivity (Herbsleb & Grinter, 1999).

Team configuration refers to distribution of team members across sites, independent of the spatial and temporal distances among them (O'Leary & Cummings, 2007; O'Leary & Mortensen, 2010). A site may be a building, office campus or city where one or more team members are located. The three key aspects of configuration are site, isolation and imbalance. Configurational distance is anchored at one extreme by fully collocated teams in which all members reside at the same location, and at the other extreme by fully dispersed teams in which every member is at a different site. PDTs lie between these extremes as hybrid configurations, differing in the arrays of individuals or subgroups at distinct locations (Burke et al., 1999).

The site aspect refers to the number of locations across which the team is dispersed locations where team members work. Other things being equal, the more sites at which team members work, the more dispersed a team. Due to number of sites where the sub-teams located coordination becomes more complicated (O'Leary & Mortensen, 2010). Cramton (2002) point out that team members' residing at different sites form the basis for perceptually grouping people together, these geographic sub-groups quickly triggers in-group/out-group dynamics, which leads to restricted inter-site information flow and, in turn, faulty attributions, reduced cohesion, and increased intragroup conflict.

The isolation aspect refers to the percentage of isolated team members. Isolated members work alone at locations. Collocated teammates provide a context for face-to-face and more unplanned interactions, however, isolates lack such interactions with local teammates, they interact more with other isolated participants and formed their own in-group (Cramton, 2002). Isolation hinders the awareness of other members' activities, reduces spontaneous discussions, and limits informal interaction. Due to a lower level of "social presence," isolated team members, independent of their geographical location, feel differently about the group, its processes, and its outcomes than non-isolated group members, feel less part of the group, have less identification with the team norms, and consequently feel more distant from the rest of the team than non-isolated team members (Siebdrat et. al., 2014).

Imbalance configuration often breeds instability (O'Leary & Mortensen, 2010). According to Siebdrat et al. (2014), the "even" or "balanced" configurations may trigger heightened intergroup-like relations between sites, while uneven or imbalanced configurations may trigger sub-group effects. Polzer et al. (2006) suggest that the faultlines were most apparent in "partly dispersed" configurations composed of two equally-sized sub-groups of collocated people. In another words, teams composed of members divided into fewer equally sized sub-groups experience the most harmful faultline effects, providing support for the notion that both a small number of sites and a balanced distribution of team members across sites elicit group

faultline dynamics.

As a result; spatial (physical) distance is geographic distance among team members, it decreases the likelihood of face-to-face interaction and results with reduced spontaneous communication. Temporal distance is time difference among team members, it decreases the likelihood of synchronous interaction and results with reduced real-time problem solving. Configurational distance significantly affects team dynamics independent of spatio-temporal distance and socio-demographic factors. Site aspect corresponds to locations where team members work, it increases the number of dependencies which must be managed and results with increased coordination complexity. Isolation aspect corresponds to locations where team members work alone, it increases the remoteness of isolated team members and results with decreased awareness. Imbalance aspect corresponds to locations with uneven distribution of team members, it increases majority influence and the potential for negative sub-group dynamics and results with increased intra-group conflict.

2.4.2. Demographic dispersion

As stated above, demographic dispersion has three critical characteristics: (1) knowledge diversity, (2) social category diversity and (3) value diversity. According to Segura et al. (2013), knowledge diversity is related to the differences in knowledge base and experience amongst team members; social category diversity is the explicit difference among team members in social category membership, such as gender, age, and ethic; value diversity is associated with member's differences in terms of what they think about the tasks, goals, targets or missions.

Social category diversity in teams refers to observable differences (such as nationality, race, ethnicity, gender, and age, native language), knowledge diversity and value diversity (such as skills, information and knowledge, cultural values, cognitive processes, and experience) refer to unobservable differences in teams (Milliken & Martins, 1996). While variety in observable characteristics is typically referred to as surface-level diversity, variety in unobservable characteristics is referred to as deep-level diversity (Carte & Chidambaram, 2004).

Surface-level diversity traits are immediately apparent upon team formation, however, deep-level diversity traits become salient as the team members interact over time. The potentially positive effects of deep-level diversity take time to emerge. Therefore, in the short-term, diverse teams typically perform worse than homogeneous teams due to the early impacts of surface-level diversity (Staples & Zhao, 2006). Due to a variety of perspectives and experiences, deep-level diversity can bring more information and ideas into the team, stimulate thinking, and can bring different networks of contacts and resources to the team. When the

deep-level diversity is relevant to the task facing the team, higher-quality outcomes should result; however, if the variety is not relevant to the task, then there is no basis for expecting. But, if group members are diverse on multiple attributes that align together, strong faultlines can develop which create further sub-group problems and team development problems. The formation of sub-groups along demographic faultlines opens up a group to a variety of conflict-increasing forces (Lau & Murnighan, 1998).

2.4.3. Cultural dispersion

Culture is a collective phenomenon which is shared with people living within the same social environment (Hofstede, Hofstede & Minkov, 1991). It is the collective programming of the mind which distinguishes the members of one group or category of people from another. Culture is learned, not inherited. It derives from one's social environment. Culture should be distinguished from human nature on one side, and from an individual's personality on the other.

We can also define culture as the partners' "habitual ways of being and acting" that stem from the distinct professional, organizational and national cultures to which they belong (Vangen & Winchester, 2014). When the characteristics of different cultures are expressed in 'stereotypical' manners to convey, cultural diversity may result in 'cultural friction' (Shenkar et al., 2008). If the points of friction are either not anticipated or appropriately managed, this may lead to diminished performance, early exit or, even, actively destructive forms of behavior (Vangen & Winchester, 2014).

Differences between people may invite social categorization distinguishing similar (in-group) others from dissimilar (out-group) others, which may result in inter-group biases-attitudinal and behavioral favoring of in-group over out-group (Van Knippenberg, De Dreu & Homan, 2004). Inter-group biases may invite a closing of the mind to dissimilar others, reducing the willingness to share and discuss information and diverse perspectives as well as a tendency to see diverse others as less trustworthy and knowledgeable sources of information, and thus lead members to pay less attention to diverse viewpoints even if they are shared (Pieterse, Van Knippenberg & Van Dierendonck, 2013).

Diversity is a double-edged sword, because, it potentially both stimulate and disrupt team performance. According to Ocker et al. (2011), cultural diversity may be the diversity attribute for which the double-edged sword of diversity is most salient. Privman (2009) stated that cultural differences are common in global PDTs, however, even subtler differences among team members from different regions of the same country may be enough to cause a negative impact.

2.5. Faultlines and sub-group formation in dispersed teams

It has been acknowledged that dimensions of dispersion lead to faultlines and sub-group formation (Gibson & Vermeulen, 2003; Thatcher, Jehn & Zanutto, 2003).

The concept of faultlines was introduced by Lau and Murninghan (1998). According to Lau and Murninghan (1998), faultlines are hypothetical dividing lines that may split a team into sub-groups based on one or more attributes. Depending on the similarity and salience of group members' attributes, groups may have many potential faultlines, each of which may activate or increase the potential for particular sub-groupings. Potential faultlines are least likely in teams with little heterogeneity (homogeneous teams), are likely to be strongest in teams of moderate heterogeneity, and likely to be weak and fragmented in highly heterogeneous teams.

Faultlines are generally viewed as detrimental, increasing the likelihood of affective conflict and power struggles, and reducing outcomes (Gibson & Vermeulen, 2003; Thatcher, et al., 2003). As a result of faultlines, coalitions of informal sub-groups can form which can lead to conflict. if the team is focused on activities that minimize awareness of the diversity of attributes, then the sub-groups may not form. The faultline strength will influence sub-group stability. If the faultline is weak, then the sub-groups are less stable and members are more likely to identify with the entire team. On the other hand, if the faultline is strong then over time the sub-group identification may grow and conflict may ensue between the sub-groups (Lau & Murninghan, 1998).

Sub-groups emerge along faultlines that have been attributed to a number of different factors including location, nationality, professional or organizational affiliation, shared group identity, power, information flow and diversity, sub-group size, resource distribution, values, race, gender, and age. Member of sub-groups develop separate identities and identify themselves as belonging to "us" rather than "them." As a result of this shared sub-group identity, the "us" becomes the "in- group" while "them" is the "out-group." One potential effect of such polarization is in-group biases (Plotnick et al., 2008a).

While shared identity have positive effects on groups such as increasing cohesion, job satisfaction and motivation, reducing conflict and improving performance, in-group biases reduce cooperation, threaten cohesiveness, increase cross-sub-group conflict, and can have dire consequences on overall group effectiveness (Cramton, 2002).

In-group biases affect leadership activities also. If the prevailing shared identity within workgroups exists at the superordinate group level, then the leader may be more successful in his or her attempts to advocate for collaboration at the superordinate group level. If the prevailing shared identity within workgroups exists at the sub-group level, however, then the

leader may have a more difficult time convincing colleagues to follow his or her lead (Cramton, 2002).

Distinct characteristic of partially dispersed teams makes them especially susceptible to sub-group biases which lead to "Us-vs.-Them" occurrences. According to Plotnick et al. (2008a), in only a very few cases are sub-groups able to overcome the "us" versus "them" in-group team dynamics emanating from the distance faultline separating them. These sub-groups are able to create a shared team identity (rather than separate sub-group identities)-an inclusive distinctiveness shared by both sub-groups.

2.6. Leadership dynamics in partially dispersed teams

While there are a wide variety of definitions of leadership, according to the one of the most widely used and accepted definition, leadership is the ability of an individual to influence, motivate and enable others to contribute toward the effectiveness and success of the organization of which they are members (As cited Fikret, 2000, p. 416).

It is also acknowledged that leadership is a process and happens within the context of a group; leadership involves influencing others; leadership involves goal attainment and leadership is an ability (Silva, 2014; Kaiser, McGinnis & Overfield, 2012; Kanji & Sa´, 2001; Kumar, Adhish & Deoki, 2014; Yukl, 2006).

Leaders affect organizational performance by inspiring, supporting, and motivating followers through interpersonal influence (Kaiser et al., 2012). Leaders are supposed to balance the job demands and job resources of their followers, but they can do it if they have the necessary skills, abilities and support to meet the demands of the position (Asiwe et al., 2015).

Military organizations are mission-oriented organizations, units are constituted and personnel are trained according to the requirements of mission and military leaders are assigned to accomplish the mission. Despite advances in technology and education, military forces need leadership to help them overcome their limitations, unite their efforts, maintain their focus, and accomplish their missions (Morath, Leonard & Zaccaro, 2011).

Military leaders are necessarily 'formal' leaders, in that they are appointed and followers respect the position they hold, and their more managerial skills are vital (Nolan, 2012). Military leadership includes authority, responsibility and chain of command as the most important dimensions. We defined military leadership as a set of skills required to use allocated authority to accomplish the mission by influencing people in the chain of command.

Leadership, an important determinant of team effectiveness, is particularly complex in PDTs and the outcome of PDT leadership issues will impact team dynamics and performance.

(Ocker et al., 2011).

Organizational environment of PDTs are complex and multiple faultlines co-exist in a dizzying array of permutations and configurations. Effects of distances such as working in different locations, different time zones, and different cultures, have implications on how leaders form teams, organize work, measure individual and group performance, reward team members, and make decisions. They also affect how teams communicate with each other, share knowledge, and identify and resolve issues (Sessa,1999).

When the distances coincided with each other, the result was a strong faultline between sub-groups. As noted by Lau and Murnighan (1998), the stronger the faultline, the stronger the distinction between sub-groups. Thus, team leaders found themselves in a difficult situation of strong in-group team dynamics. In order to be successful, PDT leaders must assist the team in bridging the faultlines (Plotnick et al. 2008a) and overcome in-group effects or conflict (Willis, 2010).

2.6.1. Leadership challenges in dispersed teams

While technology has allowed organizations to capitalize on benefits of comprising more diverse and dispersed teams, dispersion also presents formidable challenges to the team's functioning. Physical separation, coupled with the presence of collocated members at the dispersed sites, creates the potential for a powerful geographic faultline. The resulting sub-group dynamics threaten trust and cohesiveness between sub-groups, which in turn may have a negative effect on the overall effectiveness and performance of the dispersed team (Ocker et al., 2009).

Researchers (Cramton, 1997; Bourgault et al., 2008; Ocker et al., 2009; Holahan et al., 2011), who studied about dispersed teams, focused on communication, information sharing, decision making, conflict resolution, shared team identity, team socialization processes, building trust, collective efficacy and emergence of informal leaders as main challenges stemming from dispersion. Once a dispersed team is established, a leader who wants to ensure the team's success needs to focus on three specific attributes of teamwork: communication and information sharing, decision making, and conflict resolution (Harvey, Novicevic & Garrison, 2004). Information problems present a threat to team viability. Strategies that dispersed teams must use in order to manage information may be different than those used by teams that meet face to face. "Sophisticated information management skills" may be a requirement for dispersed team integration and success (Cramton, 1997). Studies about decision-making processes of dispersed teams showed that "decision making" is a real challenge for practitioners (Bourgault

et al. 2008). One of the main challenges is "team conflict" and it is exacerbated when working in a dispersed environment. Managers and team members should be aware of this tendency and should seek out conditions that mitigate it (Holahan et al., 2011).

Geographically dispersed teams tend to be more diverse in their composition with a greater variety of work experience, functional expertise, and cultural/national differences. This heightened diversity may impede the development of a shared team identity and team socialization processes. When compared to collocated teams, as a result of less exposure to one another, weaker interpersonal ties, and unshared context, dispersed teams experience less socialization and less shared identity (Holahan et al., 2011). Shared identity and trust influence the performance of dispersed teams, and building trust, shared identity, and collective efficacy are very important for better team process and higher performance (Ocker et al., 2009)

Another considerable challenge is informal leaders. Faultlines lead to emergent of informal leaders, when informal leaders emerge in teams their behavior directly opposes the formal leader in many instances and ignores them in many others, these emergent leaders exert great influence over other team members, and have a strong effect on group performance (De Souza & Klein, 1995; Wheelan & Johnston, 1996; Ocker et al., 2011).

To sum up, researchers agree that leadership in dispersed teams presents unique challenges that are not present in traditional teams (Plotnick et al., 2008), however, there is a paucity of research examining leadership issues (Ocker et al., 2011) and competencies required to overcome these challenges.

In the previous pages, we presented the literature on dispersed teams and characteristics of dispersed setting, in the following pages we will present the literature on competency and competency modeling.

2.7. Competency and competency modeling

Modern competency-based education and training movements began with efforts to reform teacher education and training in U.S. in 1960s. Early in the 1970s, David McClelland (1973), a professor of Harvard University, questioned the validity of "Intelligence and Aptitude Tests" which was used for selecting applicants for college entrance or jobs and proposed the idea of competency as a term used to challenge traditional criteria of assessment which had emphasized intelligence evaluation in the higher education system.

McClelland's findings provided a conceptual framework that led to many subsequent studies in other fields such as teacher education, vocational education, business management and human resource management. Then, competency has become a significant factor in HR

development practices (Hsieh, Su-Chin, Jui-Shin Lin, & Hung-Chun Lee, 2012; Vathanophas, 2006).

The first empirically-based and fully-researched book on competency model development was published in 1982 by Boyatzis that presents a large-scale, intensive study providing a context for identifying the special characteristics, as well as assessing and developing managerial talent. Nowadays, after the first competency model, many companies are using competency modeling for improving job performance and in turn qualifying human resources, due to the benefits associated with the competency usage such as reduced training costs, reduced staff turnover or increased employee productivity, hence performance (Robinson, Sparrow, Clegg & Birdi, 2007).

The American Heritage Dictionary of English Language (2000) provided a general description of competency as "the state or quality of being properly or well qualified". Researchers defined competency from various perspectives: Klemp (1980) defined competency as "An underlying characteristic of a person which results in effective and/or superior performance on the job"; Boyatzis (1982) defined competency as "The capacity for achieving specific results that a person brings to a job"; Burgoyne (1993) defined competency as "How the goals of organizations are best achieved by improving members' performance". After a literature review, Hsieh et al. (2012) stated that according to the most general and detailed definition which has been accepted by numerous scholars "A competency is a cluster of related knowledge, skills, and attitudes that affects a major part of one's job (a role or responsibility), correlates with performance on the job, and can be measured against well-accepted standards and improved via training and development.".

While there are many definitions of competency, most of them have some common elements: A competency is a set of knowledge, skills, attitude, traits and other personal characteristics and whole of a competency is greater than the sum of its parts; a competency is observable and measurable; a competency can be improved via training and development; a competency is related to superior performance on the job; a competency is the capacity of a person for achieving specific results; a competency is related to achieving organizational goals.

Several researchers (Knowles, 1975; Spencer & Spenser, 2003; Tucker and Cofsky, 1994) agree that components of a competency are knowledge, skills, attitude and other characteristics like motives, values, trait and self concept. According to these authors, knowledge refers to a body of information usually of a factual or procedural nature needed to understand a certain subject. Knowledge by itself is not sufficient to carry out an occupation or tasks. Skills refer to the ability to accomplish a certain mental task such as analytical thinking

and conceptual thinking or a physical task which involves psychomotor coordination. Attitude is a belief and thinking system formed in the individual's mind related to certain persons, institutions, objects, etc. Values are the generalized beliefs and attitudes in individual's personality. Values are more permanent than attitudes. Motives are the things that an individual consistently thinks about or wants that stimulate action. Motives drive, direct and select behavior toward certain actions or goals and away from others. Traits are physical characteristics and consistent responses to situations or information. Self-concept is an individual's attitudes, values or self-image and includes self-confidence and self-efficacy (Knowles, 1975; Spencer & Spenser, 1993; Tucker and Cofsky, 1994; Kanfer & Ackerman, 2005).

Spencer and Spencer (1993) depicted components of a competency with a model called "Iceberg Model". According to this model, knowledge and skills are visible characteristics and relatively easily developed through training; traits and motive are hidden characteristics, and more difficult to asses and develop. Although the authors grouped self-concept into hidden characteristics, they indicated that difficulty of developing self-concept lies somewhere in between (Spencer and Spencer, 1993). Figure 2.3. illustrates the iceberg model and central and surface competencies.
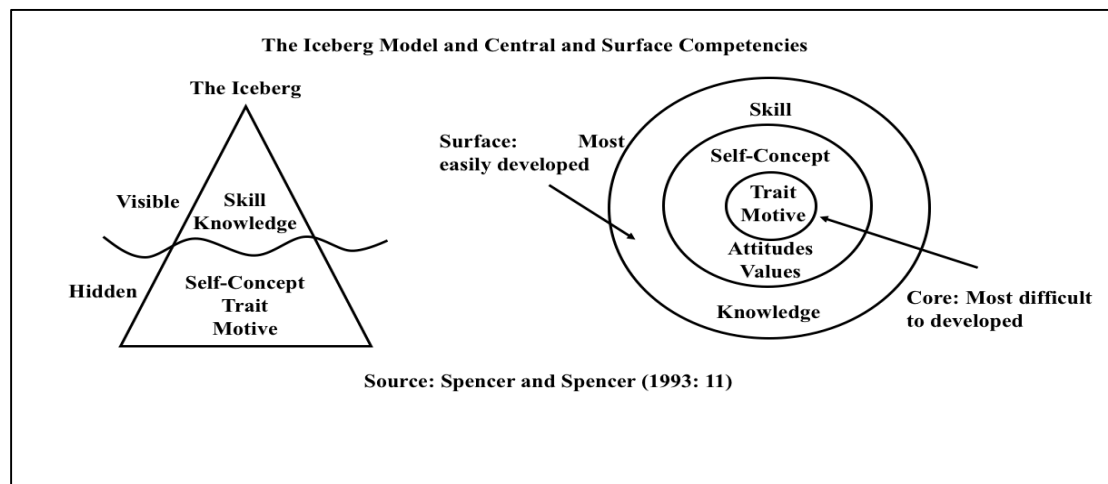
Figure 2.3.: The Iceberg Model and Central and Surface Competencies

Competencies are central to performance and there is a casual relationship among competency characteristics (Spencer and Spencer, 1993). As shown in Figure 2.4., the resultant of a critical behavior is higher performance. The level of performance (low, moderate or high) is always determined by the level of knowledge, skill and attitude (Chouhan & Srivastava, 2014).
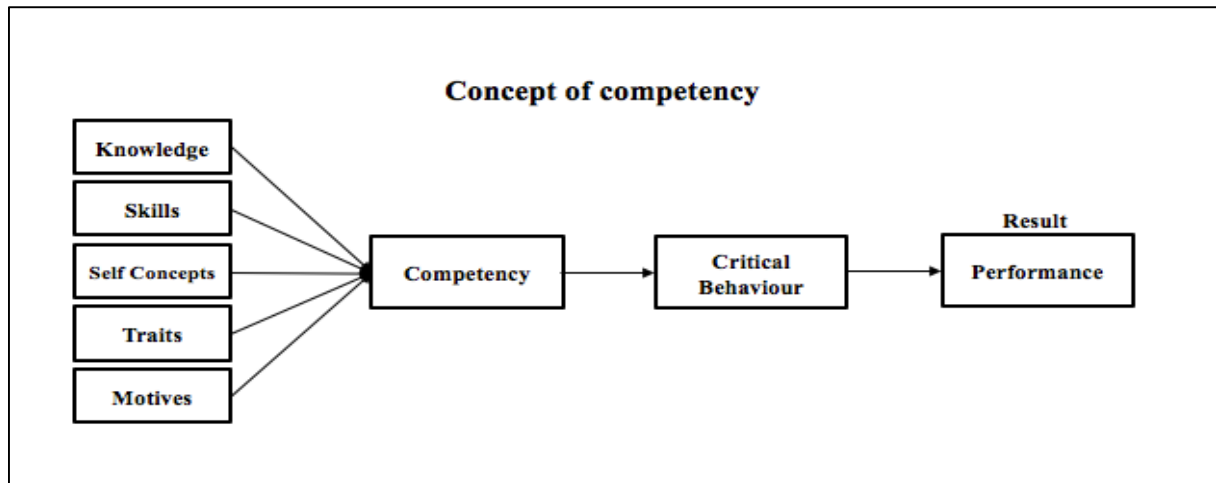
Figure 2.4.: Concept of competency (Chouhan & Srivastava, 2014, p.17)

Boyatzis (1982), explained the conceptual relationship between competency and job performance by a model called "Model of Effective Job Performance". Researcher suggested that individual competencies, job demands and organizational environment are the three critical components of a competency model and critical behaviour, and therefore maximum performance will occur when all three of the critical components of model are consists or "fit". The graphic representation of the model is shown in Figure 2.5.
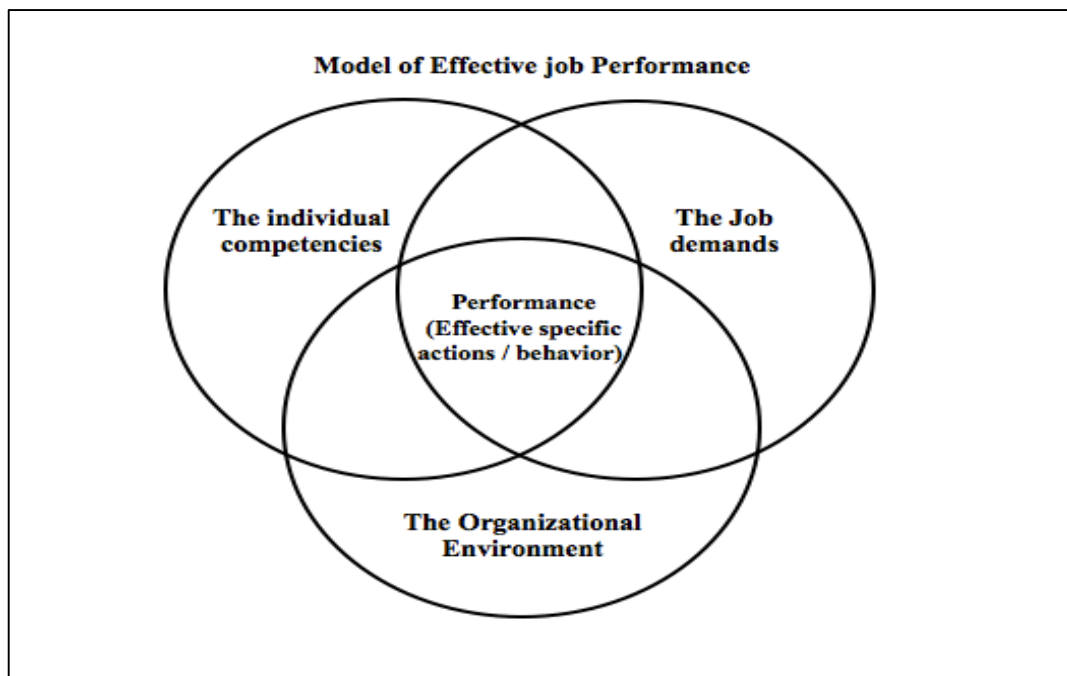
Figure 2.5.:Model of Effective Job Performance (Boyatzis, 1982, p. 13)

In this model, besides individual factors, aspects of the organization and the specific work settings influence the expression of competence. For example, in a supportive organizational

culture, workers will be more likely to expend effort toward expressing competence through task performance or an employee who feels that his or her supervisor does not appreciate his or her efforts may find little reason to expend more than a minimal amount of effort on the job, thus creating a dissociation between competence and performance. However, even if there is otherwise good organizational support, job performance is not possible unless the individual has the requisite knowledge and skills for the tasks at hand (Kanfer & Ackerman, 2005).

Researchers found correlation between competence and performance. Heffernan and Flood (2000) stated that organisations which are performing well are more likely to adopt competencies. More specifically, Tzeng (2004), who investigated nurses' self-assessment of their own nursing competencies, job demands and job performance, found a positive relationship between competency and performance. Armstrong (2006) stated that organizations as well as individuals could increase their levels of job performance to the highest through an increased level of competencies.

Competencies may be classified into three types: managerial, generic and technical or functional (Kandula, 2013). Managerial competencies are applied horizontally and vertically for analysis and decision-making, team leadership, change management, control, planning, organizing etc. Generic competencies are essential for all staff, regardless of their function or level, for communication, program execution, processing tools, linguistics, etc. The technical or functional competencies are required to perform any job in the organization within a defined technical or functional area of work for example, environmental management, industrial process, investment management, finance and administration, and human resource management.

The competency may also take hierarchy in the following order: practical, foundational, reflexive and applied competency (Dorn & Pichlmair, 2007). Practical competency is the employee's demonstrated ability to perform a set of tasks. Foundational competency is the demonstrated understanding of what and why one is doing. Reflexive competency may be classified as the employee's ability to integrate actions with the understanding of the action so that he/she learns from those actions and adapts to the changes as and when they are required. Applied competency is an employee's demonstrated ability to perform a set of tasks with understanding and reflexivity.

Main purpose of competency based human resource management is to reach the maximum performance. Nowadays, many companies are using competency modeling for improving job performance. A competency model is a descriptive tool that identifies the competencies needed to operate in a specific role within a(n) job, occupation, organization, or

industry (Fogg, 1999). The combination of knowledge, skills and other personality characteristics that are necessary for the effective performance of the organisation are included in a competency model.

Competency models provide a holistic approach to examine the competencies that an individual possesses and required by an industry or occupation (Ennis, 2008). According to researchers (Campion, Fink, Ruggeberg, Carr, Phillips & Odman, 2011; Spencer & Spencer, 1993), competency models can play many roles in HR systems such as hiring, selecting, training, evaluating, compensating, promoting employees; developing employee careers, managing employee information etc.

Competency modeling is the activity of determining the specific competencies that are characteristic of high performance and success in a given job. Competency models can be developed for specific jobs, job groups, organizations, occupations, or industries. The single-job, the one-size-fits-all, and multiple-job approach are suggested methods (Chouhan & Srivastava, 2014, p.19); and job-analysis interviews, focus groups, questionnaires, job descriptions, competency-model formats are common tools for building a competency model (Mirabile,1997).

CHAPTER 3: STUDY 1 - IDENTIFYING COMPETENCIES REQUIRED TO COMMAND A DISPERSED MILITARY TEAM

3. STUDY 1 - IDENTIFYING COMPETENCIES REQUIRED TO COMMAND A DISPERSED MILITARY TEAM

3.1. Introduction

Recently, Wolter (2014) and his colleagues (O'Shea, Ford, Fleisher, Adeniyi, Conzelman & Webster) conducted a study to identify the competencies required to command an army brigade. They developed a preliminary Brigade Command Competency Model by reviewing literature, then revise the preliminary competency model by interviews and clarified the criticality of the competencies identified and refined in the interview phase through a survey.

In this study, we aimed to identify leadership competencies required to command a dispersed military team (DMT). Our study was completed in three phases: First we conducted a literature review and developed a "Preliminary DMT Commander Competency Model". Second, we tested our model by conducting a survey, and third after synthesizing the results, we proposed a final DMT Competency Model.

In the first phase, in order to developed a "Preliminary DMT Commander Competency Model" we reviewed and analyzed relevant literature within military and business sectors, leadership manuals of the armies, DMT commander's instructions and task analysis, DMT leadership course contents and training notes. These activities resulted in the development of a "DMT Commander Competency list". Then we refined the list and selected specific competencies and defined the competencies and their key behavioral indicators by using instructions, task analysis and competency dictionaries. Finally, we reached the "Preliminary DMT Commander Competency Model" including 45 competencies. The Preliminary DMT Commander Competency Model is presented in the Appendix-1.

To identify specific competencies and key behavioral indicators, it would be easier to conduct interviews with the selected subject mater experts (SME), but since SMEs and the participants of the study dispersed all over the world, we preferred to conduct a literature review.

Second and third phases of the study will be presented in the following pages.

3.2. Method

3.2.1. Data collection procedures

Both qualitative and quantitative approaches were used for data collection. This type of mixed-method research, although relatively rare, was recently lauded in a methodological review of the leadership literature (Bryman, 2011; Wolters et al., 2014).

After developing the preliminary competency model, to accomplish the survey,

individuals who had experienced dispersed team command from different vantage points were solicited one by one via telephone/WhatsApp/Tango etc. to inform about the research and the importance of participating the surveys. The process of engaging participants for survey took more than 45 days. The survey, table of identified specific competencies, an information note, and a biographical data sheet were sent with an e-mail to 60 individuals, who gave informed consent, and 44 responses were received (40 via e-mail, 4 via mail). The first e-mail was sent in 10 October 2015, and the last response was received via mail in 10 December 2015. The process took almost 2 months. Due to language differences, survey was developed in English and then translated in to Turkish, after conducting the survey, all the results were also translated in to English.

3.2.2. Participants of the study

The survey was applied in a European Armed Forces. Totally 44 dispersed team staff (leader and member) participated the survey: 15 from defense attaché teams dispersed to different countries over the world such as Italy, Russia, Chile, Romania and Nigeria; 29 from gendarmerie district commands/teams dispersed to different cities of Turkey. Table 3.1 summarizes the demographic characteristics of the participants.

Table 3.1. Demographic characteristics of the participants

Demographic Characteristics	Gendarmerie District Command Staff (N=29)	Defense Attaché Team Staff (N=15)
Ranks[4]	Colonel-1 Lieutenant Colonel-8 Major-5 Captain-6 First Lieutenant-3 Sergeant Major-4	Colonel-8 Lieutenant Colonel-2 Major-2 Sergeant Major-3
Educational status	Degree -11 Master's degree-15 Doctoral degree-2	Degree -3 Master's degree-11 Doctoral degree-1
Current position	Team commander-8 Team member-1 Mid-level commander-8 Mid-level personnel-6 High-level personnel-4	Team commander-5 Team member-4 Mid-level personnel -3 High-level personnel -3
Practice	Less than 1 year-0 1 to 5 years-22 6 to 10 years-5 More than 10 years-2	Less than 1 year-2 1 to 5 years-8 6 to 10 years-3 More than 10 years-2

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[4] In most of the armies, ranks of officers are ordered from junior to senior as lieutenant, first lieutenant, captain, major, lieutenant colonel and colonel. The sergeant major is the most senior NCO rank.

Participants of our study were male. Mean age of the participants was 39, majority of them had master's degree and experienced officers. All of the participants were on active duty at the time of the survey. More than 40 % of the participants commanded a dispersed team and served as a gendarmerie district command staff at least 1-5 years.

3.2.3. Survey

We conducted one survey with two sections, one qualitative and one quantitative. The whole survey was presented in the Appendix-2.

3.2.3.1. Qualitative section

Qualitative section of the survey consisted of two parts, first part included 5 topic questions for exploring participants' opinions about the required and core competencies; and the second part included 5 topic questions for exploring participants' opinions about the "Preliminary DMT Competency Model". The section totally included 10 major topic questions (9 open ended and 1 closed ended).

In the first part, we asked following five questions, the first four questions are adapted from the definition of competency (Spencer and Spencer, 1993; Vathanophas, 2006) and the fifth is adapted from definition of core competency (Rycus & Hughes, 2000).

- Please write down your opinion about the difference between commanding a dispersed team and collocated team?

- In your perspective what differentiates a good a dispersed team leader/commander from a collocated team leader/commander?

- What differentiates a good dispersed team leader/commander from a poor one?

- What differentiates a good dispersed team member from a poor one?

- What competencies are required for serving in a dispersed team for both commanders and members?

In the second part we asked following 5 questions. First two questions are developed for defining most important competencies of the "Preliminary DMT Competency Model" for dispersed team staff and last three questions are adapted from Clearinghouse competency modeling user guide for defining the reflection of the participants about the model and for developing the model.

- What would you say are the 10 most important competencies for a dispersed team leader/commander to   possess?

- What would you say are the 10 most important competencies for a dispersed team member to   possess?

- Does "The competency model" reflect the required competencies to be fully successful dispersed team leader? (Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree)

- What would you change concerning this competency list? (What would you add? What would you delete?)

- Write the competencies that should be terminologically changed and identify new competency proposed?

3.2.3.2. Quantitative section

The quantitative survey was developed to generate ratings that would help clarifying the importance and required proficiency level of the competencies defined in the Preliminary DMT Commander Competency Model. In many competency modeling efforts, this step involves having participants rate the importance of each competency (e.g., each competency is rated on a Likert-type scale ranging from very important to unimportant). Asking participants to rate the importance of the competency was likely to result in minimally useful information, for this reason, an importance based and a proficiency-based scale adapted from Wolters et al. (2014) were used together. Specifically, for each competency, participants were asked following two questions and responded on 5-point Likert scale:

- What is your opinion about the importance of the following competencies required to be a successful commander of a dispersed team? (Rated on a 5 point Likert-type scale ranging from Strongly Disagree to Strongly Agree)

- What is the required proficiency level of following competencies to command a dispersed team? (Rated on a 5 point Likert-type scale ranging from No proficiency required to Expert level)

The biographical data sheet was developed to collect demographic information about the participants. Information collected included the gender, age, rank, educational status and commanding experience.

3.2.4. Data Analysis

We analyzed our qualitative data via the thematic analysis method (Braun & Clarke, 2006). After the collection of the data, first, we read/re-read the transcripts carefully under the view of our research question and considering the interview questions. During this process we made notes about our first impressions for coding. In a second phase, we manually coded/labeled relevant words, phrases, and sentences that were repeated several places, that were explicitly stated as important, and that we were in line with the relevant literature. In a third phase, we combined the relevant codes, and transformed them into themes (i.e., processes,

differences, comparisons, requirements, and limitations, etc.), giving the final labels to the themes. The themes occurrence was then calculated considering one occurrence per participant. Considering the themes occurrence across the participants opinions and the importance attributed to those themes, it was decided which were most relevant and how they were connected to each other; finally, we wrote up our results.

The quantitative data regarding the importance and the required proficiency level of the competencies were analyzed and presented following the Wolters et al. (2014) approach. The analysis corresponds to descriptive statistics (for instance, frequencies, means, standard deviations) with the support of the sotware SPSS.

3.3. Results

3.3.1. Results of the qualitative section

3.3.1.1. The difference between commanding a dispersed team and collocated team

Participants agreed that commanding a dispersed team is harder than commanding a collocated team; spatial separation and environmental differences are the source of difficulties while commanding a dispersed team and main difficulties are limited face to face communication, supervision, and detecting and solving problems; requirement of commanding a dispersed team is qualified leadership and commanders should be more focused on professional knowledge, sophisticated communication and feed-back system, using initiative, crisis management, discipline, building trust and decision making. Following statements illustrate this conclusion:

> *... Of course, it will be harder to command a dispersed team because of communication problems, lack of direct supervision and being away from my staff. I would like to command a collocated team as a commander (DAT staff, Participant 7).*

> *... A dispersed team leader is more disadvantageous because of physical dispersion in coordinating team members' activities and providing overall control on the general system (GDC staff, Participant 14).*

> *... Dispersed team members are affected by the character and the culture of the site. Because of spatial separation, the time required for understanding, adapting and implementing orders is expected to be more in dispersed teams than in collocated teams (GDC staff, Participant 6).*

> *... While commanding a dispersed team, managing organizational groups is harder than collocated teams. Supervision requires more time and effort. Planning and*

organizing activities require more factors to be considered. Cultural differences should always be considered as a planning factor (GDC staff, Participant 21).

... A dispersed team leader should have all the required competencies, missing competencies will cause efficiency problems in a short time (Sample-1, Participant 16).

... In dispersed teams it is hard to tolerate the insufficiency of the leaders under the supervision of other levels of the organizations (GDC staff, Participant 25).

... While commanding a collocated unit, leader can eliminate possible management weaknesses by being in critical places, reorganizing the command and demonstrating personal courage, but it is not easy while commanding a dispersed team if the leadership is not strong enough (DAT staff, Participant 15).

3.3.1.2. Differentiating facts of a good[5] dispersed team leader/commander from a collocated team leader/commander

According to the participants, dispersed and a collocated team commander must have the basic leadership competencies, but qualification level of these competencies will be different. Differentiating leadership competencies are problem solving, professional knowledge, ability to recognize the strengths in one's team, risk management, decision making, high sense of responsibility, achievement motivation, influencing staff, self-confidence, decisive, experience, coordination, supervision and feed back. Most frequently expressed competencies that a good dispersed team leader/commander should be more qualified are communication (53%), building trust (27%), initiative (20%) and crisis management (20%). The following statements are the example of participants' expressions:

.... The required leadership abilities are similar in both groups (dispersed team and a collocated team), but a dispersed team commander is obliged to use more initiative and motivates his/her staff to use initiative... (GDC staff, Participant 19).

... Commanding dispersed teams requires more coordination. Leader makes an endeavor to give directions that will abolish the entropy (GDC staff, Participant 8).

... Some of the expected leadership competencies of a collocated team leader are compulsory for a dispersed team leader (DAT staff, Participant 2).

... Communication, building trust, taking risk, crisis management and creating spirit of unity are the competencies required to be "expert level" to command a DMT (DAT staff, Participant 15).

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[5] A definition of "good" was not provided; rather, each participant was allowed to define "good" relative to his or her own experiences and interpretation.

3.3.1.3. Differentiating competencies of a good dispersed team leader/commander from a poor one

Participants reflected their perspectives by listing the differentiating competencies and focused on ten competencies. Most frequently mentioned ten differentiating competencies are in Table 3.2.

Table 3.2. Most frequently mentioned eight differentiating competencies

S/N	Competencies of the the team leader	Rate	Ratio (%)
1	Initiative	33	75
2	Communication	19	43
3	Planning and Organizing	17	39
4	Problem solving	14	32
5	Decisive	11	25
6	Responsibility	10	23
7	Knowledge of doctrine and legal regulations (KDLG)	9	20
8	Motivating and influencing others	9	20

Rate: The number of the participants who pointed that competency.
Ratio: Percentage of the participants who pointed that competency.

3.3.1.4. Differentiating competencies of a good dispersed team member from a poor one

Participants reflected their perspectives by listing the differentiating competencies and focused on nine competencies. Most frequently mentioned nine differentiating competencies are in Table 3.3.

Table 3.3. Most frequently mentioned nine differentiating competencies

S/N	Competencies	Rate	Ratio (%)
1	Teamwork	23	52
2	Initiative	21	48
3	KDLG	18	41
4	Communication	18	41
5	Responsibility	16	36
6	Self confidence	12	27
7	Achievement motivation	9	20
8	Problem solving	8	18
9	Engages in self- development activities	8	18

3.3.1.5. Most important ten competencies for a dispersed team leader/commander to possess

Participants reflected their perspectives by listing the "Most important ten competencies for a dispersed team commander". Most frequently mentioned most important ten competencies are in Table 3.4.

Table 3.4 Most important ten competencies for a dispersed team commander to possess

S/N	Competencies	Rate	Ratio (%)
1	Initiative	30	68
2	Communication	27	61
3	Decision making	22	50
4	Problem solving	21	47
5	Managing organizational groups	20	45
6	Ensuring shared understanding	20	45
7	Planning and organizing	19	43
8	Responsibility	19	43
9	Crisis management	19	43
10	Motivating and influencing others	19	43

3.3.1.6. Most important 10 competencies for a dispersed team member to possess

Participants reflected their perspectives by listing the "Most important ten competencies for a dispersed team team member. Most frequently mentioned most important ten competencies are in Table 3.5.

Table 3.5. Most important ten competencies of a DMT team member

Rank Order	Competencies	Rate	Ratio (%)
1	Teamwork	34	77
2	Responsibility	33	75
3	Communication	31	70
4	Achievement motivation	30	68
5	Self-control	30	68
6	Adaptibility	26	59
7	Self-confidence	22	50
8	Knowledge of doctrine and legal regulations (KDLG)	21	48
9	Building trust	18	41
10	Self-awareness and self- understanding	16	36

3.3.1.7. Competencies required for serving in a dispersed team for both commanders and members (Core competencies)

Participants reflected their perspectives by listing the "Core competencies". Most frequently mentioned ten core competencies are in Table 3.6.

Table 3.6. Most frequently cited ten core competencies

Rank Order	Competencies	Rate	Ratio (%)
1	Communication	28	63
2	Teamwork	28	63
3	Initiative	26	59
4	Problem solving	23	52
5	Achievement motivation	22	50
6	Responsibility	21	48
7	Knowledge of doctrine and legal regulations (KDLG)	21	48
8	Building trust	21	58
9	Adaptability	20	45
10	Decision making	19	43

Regarding the differentiating competencies (Table 3.2, Table 3.3), a competency is related to superior performance in a job or situation and actually predicts who does something well or poorly (Spencer and Spencer, 1993), participants agree that initiative, communication, responsibility, KDLG and problem solving are the common differentiating competencies for both dispersed team leader/commander and team member. Reason for the prominence of these competencies is in the nature of organizational environment of PDTs, because, they function under the effects of dispersion, in another saying, they work in different locations or time zones and likely also taking into account a diversity of different disciplinary backgrounds and expertise (Cramton, 2002; Ocker et al., 2011).

More specifically, limited face-to-face interaction, lack of supervision and leadership support require competence in initiative, communication and problem solving in dispersed settings, only a responsible staff is able to build trust which influences the performance of dispersed teams and is very important for better team process (Ocker et al., 2009), and competence in knowledge (KDLG) leads to trust (Zhang, Tremaine, Egan, Milewski, Fjermestad & O'Sullivan, 2007), reduces the costs of controlling and monitoring efforts in dispersed teams (Kanawattanachai & Yoo, 2002).

Focusing on the differences between the differentiating competencies of a dispersed team

leader/commander and dispersed team member, while planning and organizing, motivating and influencing others and decisive are the prominence competencies for leaders, achievement motivation, engages in self-development activities and teamwork are prominence competencies for members. Reason for the difference of these two set of competencies lies in the in the nature of the level of the individual. Because, leadership is an influencing process and requires different competencies from membership. Participants stated that while commanding a dispersed team, planning and organizing activities require more factors to be considered, because, dispersion is experienced as challenges of coordination, communication, control, and isolation and effects of dispersion have implications on how leaders form teams and organize work (O'Leary, 2002). Dimensions of dispersion lead to faultlines and make teams especially susceptible to sub-group biases (Gibson & Vermeulen, 2003; Thatcher et al. 2003) which reduce cooperation, threaten cohesiveness, increase conflict, and can have dire consequences on overall group effectiveness (Cramton, 2002), in order to mitigate these negative effects, DMT leader should be competent in motivating and influencing others. It is also stated that decision-making processes of dispersed teams is a real challenge for practitioners (Bourgault et al., 2008).

Regarding the most important competencies (Table 3.4., Table 3.5.), results showed that operational base competencies are prominence for a dispersed team commander/leader and personal base competencies are prominence for a dispersed team member. Specifically, participants focused on six operational base (Decision making, problem solving, managing organizational groups, planning and organizing, initiative, crisis management), three personal base (Responsibility, communication, motivating and influencing others) and one leadership base (Ensuring shared understanding) competencies for a dispersed team commander/leader; eight personal base (Responsibility, communication, teamwork, achievement motivation, self-control, adaptability, self-confidence, self-awareness and self- understanding), one leadership base (Building trust) and one knowledge base (KDLG) competencies for a dispersed team member. Taken together, these competencies demonstrate the variety of knowledge, skills, and abilities most necessary for dispersed team command and guide the focus of training activities.

3.3.1.8. Evaluation of "Preliminary Competency Model"

Majority of the participants (91 %) agreed that the Preliminary DMT Competency Model, presented in the Appendix-1, reflected the required competencies to be a fully successful dispersed team commander. Table 3.7. shows the evaluations of participants.

Table 3.7. Evaluation of "Preliminary DMT Competency Model"

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean
Rate	2	1	1	21	19	4.23
Ratio (%)	5	2	2	48	43	

Three of the participants suggested to adding being proactive to the competency model. One of the participants suggested to list the competency planning and organizing as 2 separate competencies as planning and organizing. None of the competencies is evaluated to be terminologically changed and no new competency is identified.

3.3.2. Results of the quantitative section

3.3.2.1. Importance of the competencies defined in the Preliminary DMT Competency Model

After the mean score and standard deviation of each competency had been calculated, all forty-five competencies scored above average. Every competency theme received a mean score around or higher than 4.00. Problem Solving and Initiative are the highest rated competencies with the mean rating of 4.77 and ability to create a learning organization is lowest rated competency with the mean rating of 3.95. The differences among the ratings are very small. For example, the difference between the mean rating for the highest rated competency (Problem Solving, 4.77) and the mean rating for the 10th highest rated competency (Motivating and influencing others, 4.68) is of 0.09, and the lowest rated competency (Ability to create a learning organization, 3.95) is 0.82. The results are presented in the Appendix-3.

3.3.2.2. Required proficiency level of the competencies defined in the Preliminary DMT Competency Model

After the mean score and standard deviation of each competency had been calculated, all forty-five competencies scored above average. Every competency theme received a mean score of over 3.00. Knowledge of doctrine and legal regulations is the highest rated competency with the mean rating of 4.55 and Ability to create a learning organization is lowest rated competency with the mean rating of 3.43. The differences among the ratings are very small. For example, the difference between the mean rating for the highest rated competency (4.55) and the mean rating for the 10th highest rated competency (4.41) is 0.14; lowest rated competency (3.43) is 1.11. Results are presented in Appendix-4. Inspection of results showed that first 34 competencies were judged to require an expert level of proficiency, and the other 11 competencies were judged to require an advanced level of proficiency.

3.3.3. Results synthesis and competency model suggested

According to the results of qualitative section of the survey, participants focused on nineteen different competencies as most important, differentiating and core competencies. According to the results of quantitative section of the survey, participants agreed that these competencies require at least an expert level of proficiency (Except adaptability and engaging in self development, which are agreed to be advanced level). We compiled the qualitative and quantitative results and developed Table 3.8., which shows the leadership, core and membership competencies and their required proficiency level.

Table 3.8. Leadership, core and membership competencies and their required proficiency level

S/N	Competency	Core	Leadership Most important and Differentiating	Membership Most important and Differentiating	Proficiency Level
1	Communication	X	X	X	Expert
2	Responsibility	X	X	X	Expert
3	Decision making	X	X		Expert
4	Initiative	X	X		Expert
5	Knowledge of doctrine and legal regulations	X		X	Expert
6	Achievement motivation	X		X	Expert
7	Adaptability	X		X	Advanced
8	Building trust	X		X	Expert
9	Teamwork	X		X	Expert
10	Problem solving	X	X		Expert
11	Planning and organizing		X		Expert
12	Crisis management		X		Expert
13	Ensuring shared understanding		X		Expert
14	Managing organizational groups		X		Expert
15	Motivating and influencing others		X		Expert
16	Self-awareness and understanding			X	Expert
17	Self-confidence			X	Expert
18	Self-control			X	Expert
19	Engaging in self development			X	Advanced

This result correlates with the participant's reflections and researchers' findings. As stated above, participants agreed that one of the requirement of commanding a dispersed team is more qualified leadership and researchers (Siebdrat et al., 2008; Kossler et al., 2000) suggested that skills necessary to effectively lead a CLT can also be used to lead a GDT, but what is needed is greater emphasis on the core competencies that most effective leaders already possess.

According to the results of survey, majority of the participants (91%) agreed that

Preliminary DMT Commander Competency Model, which includes 45 competencies reflected the required competencies to be a fully successful dispersed team commander. However, Spencer and Spencer (1993) propose that long "laundry lists" of competencies are less useful than shorter or better-focused lists of the most essential items. Basing on the results presented in Table 3.8., we eliminated the intersecting competencies and developed a "DMT Competency Model" consisting of nineteen competencies. In this model, we defined ten core, five leadership and four membership competencies. Since DMTs coordinate their work predominantly with electronic information and communication technologies for example; e-mail, radio links, video-conferencing, etc. (Segura et al., 2013; Kossler et al., 2000), we added "Appropriate use of technology", which also requires advanced level of proficiency, to the membership competencies list and proposed the final model. The refined "DMT Competency Model" is presented in the Table 3.9.

Table 3.9. Competency model of the DMT

Leadership competencies	Core competencies		Membership competencies
- Motivating and influencing	- Communication	- Building trust	- Self Awareness and Understanding
- Planning and organizing	- Teamwork	- Responsibility	- Self-confidence
- Crisis management	- Adaptability	- Initiative	- Self-control
- Managing organizational groups	- Achievement motivation	- Problem solving	- Engaging in self development
- Ensuring shared understanding	- Knowledge of doctrine and legal regulations	- Decision making	- Appropriate use of technology

Considering our model, we suggest that DMT commanders should be competent in five leadership competencies that are described below.

Motivating and Influencing: Motivating and influencing is the ability to enhance others' commitment to their work and requires affecting opinions, judgments or behaviors of others through persuasion, mediation, and so forth. It is an essential competency for leading in a context of dispersion that leads to faultlines and make teams especially susceptible to sub-group biases (Gibson et al., 2003; Thatcher et al., 2003).

Planning and organizing: Planning and organizing refers to dividing the task into component parts and assigning responsibilities to each. It is essential for overcoming the challenges of coordination, communication and control (O'Leary, 2002) in a dispersed setting.

Crisis management: Crisis management refers to plannig and coordinating to prepare for, and respond to, threats that may prevent or impede operational activities. It is essential for overcoming challenges of unplanned developments, which may develop as a result of asynchronous interaction (O'Leary et al., 2010), cultural friction (Shenkar et al., 2008), and affective conflict (Gibson et al., 2003; Thatcher et al., 2003).

Managing organizational groups: Managing organizational groups is one of the main function of commanders/leaders in the military context, and refers to providing excellent leadership, clear direction and specific individual goals to help people perform at their best (Bell and Kozlowski, 2002; Army, 2006). It is an essential competency for leaders who are likely to be collocated with some members while they need to develop telepresence with others.

Ensuring shared understanding: Ensuring shared understanding refers to influencing a group to support a common method of behavior or way of thinking. It is an essential competency in dispersed setting, because dispersion provides a natural basis for the development of sub-group formation and in-group biases (Ocker et al., 2011; De Rooij, 2009), which reduce cooperation, threaten cohesiveness, increase cross-sub-group conflict, and can have dire consequences on overall group effectiveness (Cramton et al., 2002).

In addition, we suggest that DMT staff (both leaders and members) should be competent in ten core competencies that are described below.

Communication: We defined communication as giving and receiving information, ideas, and feelings with accuracy and understanding. Communication is the key competency for a DMT staff in an environment which reduces chances for face-to-face communication (Zhang et al., 2007), limits the possibilities for sub-teams to interact with each other and causes the sub-teams to negatively stereotype each other (Bos, Shami, Olson, Cheshin & Nan, 2005; Huang & Ocker, 2006). A DMT staff should be competent in communication, otherwise, the team will never be able to manage teamwork (i.e., information sharing, decision making and conflict resolution etc.) and develop a shared identity, besides, growing sub-group identities will lead to loss of shared understanding and team performance (Ocker et al., 2009; Willis, 2010).

Teamwork: Teamwork refers to working together in a cooperative environment to achieve common team goals. Dispersed context demands competence in teamwork in order to facilitate awareness, to create an effective communication climate and to motivate team members at a distance (De Rooij, 2009).

Adaptability: Adaptability is the ability to change in response to an altered situation. It is an essential competency to perform in a dynamic and diverse work environment (i.e., different

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national, organizational or site cultures, different disciplinary backgrounds and expertise).

Achievement motivation: Achievement motivation refers to the motivation for working hard and diligently to achieve success. It is essential for team as well as individual performance.

Knowledge of doctrine and legal regulations: Having knowledge of the doctrine and legal regulations most relevant to team function result with competence. The degree to which leader delegates to a sub-team depends on the competence level of the sub-team. The competence also determines the level of trust (Zhang et al., 2007), and trust reduces the costs of controlling and monitoring efforts in dispersed teams (Kanawattanachai & Yoo, 2002).

Building trust and responsibility: Building trust is interacting with others in a way that gives them confidence, and responsibility is acknowledging and accepting the choices/actions and the results they have led to. A responsible staff is well able to build trust. Trusting relationships in any team reduce transaction costs, increase cooperation, and promote a respect for authority that enables distant management (Kramer, 1999).

Problem solving, decision making and initiative: Problem solving refers to defining problems and developing practical and timely solutions. Decision making refers to understanding problems and choosing a course of action by using effective approaches. Initiative refers to identifing what needs to be done and taking action to achieve standard of excellence beyond job expectations. We suggest that problem solving, decision making and initiative are the most important three competencies, because effects of distances, especially, asynchronous and limited face-to-face interaction, telepresence of leader, and cultural diversity multidimensionally influence dispersed work (Cramton, 2002) and result with challenges in problem solving and decision making, and require taking/using initiative to overcome these challenges.

And finally, we suggest that DMT members should be competent in following five competencies that are described below.

Self awareness and understanding, self-confidence, self-control and engaging in self development: Self-confidence refers to one's belief that he/she possesses the ability to complete a certain task. Self-control refers to refraining from acting upon his/her impulses and desires. Self awareness and understanding refers to using critical self-observation to evaluate strengths and limitations. Engaging in self development refers to setting personal goals and evaluating progress toward them. Results of our study showed that these are essential personal characteristic of a DMT member to posses, and we suggest that a DMT member should have the ability to observe and to evaluate himself/herself, be confident about his/her competencies, refrain from emotional actions and engage in self- development activities.

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Appropriate use of technology: Appropriate use of technology is the ability to select and apply contemporary forms of technology to compile information. It is an essential competency for a DMT member, because dispersed teams rely primarily on information and communication technology (ICT) to collaborate (e.g. email, electronic meeting systems, web-based applications, teleconferencing, ect.) and the use of ICT constitutes a significant portion of the interaction between the team members of a dispersed team (Willis, 2010). A DMT member should be competent in appropriate use of ICT, otherwise, the team loses the ability to coordinate, to collaborate and manage teamwork (i.e., information sharing, decision making, developing shared understanding and conflict resolution etc.).

3.4. Discussion and conclusion

3.4.1. Discussion

We found that commanding a DMT is not too much different from a CLT, but more difficult when compared to commanding a CLT, and requirement of commanding a DMT is more qualified leadership. This result supports prior literature which states that there are no major differences between GDTs and CLTs, the skills necessary to effectively lead a CLT can also be used to lead a GDT, but what is needed is greater emphasis on the core competencies that most effective leaders already possess (Siebdrat et al., 2008; Kossler et al., 2000).

Related to dispersion, we found that spatial separation and environmental differences are the source of difficulties while commanding a dispersed military team, lead to limited face to face communication and supervision, due to lack of face to face communication and supervision, DMT commanders have challenges while determining entropy, providing logistic and administrative support, ensuring shared understanding/sustaining esprit de corps, reaching and keeping standards and problem solving.

These findings correlate with the recent studies. Research showed that dispersion is experienced as challenges of coordination, communication, control, and isolation by the managers (O'Leary, 2002); effects of distances such as working in different locations, different time zones, and different cultures have implications on how leaders form teams, organize work, measure individual and group performance, reward team members, and make decisions. They also affect how teams communicate each other, share knowledge, and identify and resolve issues (Sessa,1999); distances between sub-teams limits the possibilities for sub-teams to interact each other, and limited communication may cause the sub-teams to negatively stereotype each other (Bos et al., 2005; Huang & Ocker, 2006), for example, language barriers

as part of cultural distances cause reduced project participation from non-native speakers, less frequent communications, longer times to communicate, and more misunderstandings (Espinosa, De Lone & Lee, 2006).

We suggest that to overcome the difficulties stemming from spatial separation and environmental differences, in another words, to overcome the difficulties stemming from dispersion, DMT leaders/commanders should be more focused on professional knowledge, sophisticated communication and feed-back system, using initiative, developing a control and coordination system, building trust and decision making.

These findings are in line with the prior studies. Research suggested that for a healthy and successful team development process; teams should continually be informed of the team's strategy, be involved in decision-making processes, be provided with tools for communication, receive regular communications, see each member's efforts as contributing to the success of the team's strategy, have a leader who will provide feedback and stand up for the individuals on the team (Geurts, 2005); once a dispersed team is established, a leader who wants to ensure the team's success needs to focus on three specific attributes of teamwork: communication and information sharing, decision making, and conflict resolution (Harvey et al., 2004); team conflict is one of the main challenges and it is exacerbated when working in a dispersed environment, managers and team members should be aware of this tendency and should seek out conditions that mitigate it (Holahan et al., 2011).

The required competencies for effective performance at a position can be determined as being consistent with the job demands and also the organizational environment (Vathanophas, 2006). Competencies in our model (Table 3.9.) correspond to the challenges discussed in dispersed team literature. For example, sophisticated information management skills (Cramton, 1997); influencing followers (Yukl, 2002); conflict resolution (Harvey et al., 2004); decision making (Bourgault et al., 2008); building trust, shared identity and collective efficacy (Ocker et al., 2009); team conflict, shared team identity and socialization processes (Holahan et al., 2011); conveying/changing intent, receiving feed-back, observing chain of command, ensuring shared understanding, reducing ambiguity and managing/adopting heterogeneous cultures (Connaughton, et al., 2011); communication, coordination, shared mental models/information sharing and trust (Turcotte et al., 2014).

Our study contributes to the literature in three ways. First, our findings contribute to PDT leadership requirements (Siebdrat et al., 2008; Kossler et al., 2000), difficulties stemming from dispersion (Sessa,1999; O'Leary, 2002; Privman, 2009; Bos et al. 2005; Huang & Ocker 2006; Espinosa, 2006; Zhang et al., 2007) and competencies required to overcome difficulties

stemming from dispersion (Geurts, 2005; Harvey et al., 2004; Holahan et al., 2011).

Second our findings contribute to the understanding of leadership in PDT. Because, leadership, an important determinant of team effectiveness, is particularly complex in PDTs and outcome of PDT leadership issues will impact team dynamics and performance (Ocker et al., 2011). Organizational environment (i.e. different locations, time zones, cultures distances) of PDTs are complex and multiple faultlines co-exist in a dizzying array of permutations and configurations and effects of these distances, namely dispersion, have implications on how leaders form teams, organize work, measure performance and make decisions and they also affect how teams communicate with each other, share knowledge, and identify and resolve issues (Sessa,1999). Especially, when the distances coincided with each other, the result is a strong faultline between sub-groups (Lau & Murnighan, 1998). Thus, PDT leaders find themselves in a difficult situation of strong in-group team dynamics. In order to be successful, PDT leaders must assist the team in bridging the faultlines (Plotnick et al. 2008) and overcome in-group effects or conflict (Willis, 2010).

Third, our study is the first to integrate dispersed settings to a competency model in military context. We developed a competency model which consists twenty competencies for a dispersed military team. In this model, we defined ten core competencies for partially DMT staff (for both commander and member), five competencies for a DMT commander and five competencies for DMT member, and underlined that each competency requires at least expert level of proficiency.

The dimensions of the dispersion were the main limitation of the study. The participants were dispersed to different countries over the world such as Italy, Russia, Chile, Romania and Nigeria, and to different cities of Turkey. Due to the geographic distances, we could not manage to make use of interviews to collect data and we had to develop our Preliminary DMT Commander Competency Model by reviewing relevant literature.

Leaning on technology is a limitation of PDTs. We also experienced this limitation. Due to lack of face-to-face communication, we had to use technology (e-mail, Facebook, WhatsApp, etc.) to communicate and coordinate the survey. Although we sent a detailed information note to the participants, the process of engaging participants and creating a shared understanding for survey took more than 45 days, and required extra effort. Additionally, exogenous factors affected the study. Some of the individuals were not able to respond or some of them were not able to respond on time due to unplanned business trips, job training and workload.

The competency model derived from the findings of this study should be valuable to armies that have dispersed components like defense attaché teams and gendarmerie forces.

Industrial and public organizations (airways companies, ministry of foreign affairs, etc.) that benefit components could look to this study as a template for developing their models as well.

Competency models can play many roles in HR systems such as training, evaluating performance, promoting, developing careers, managing information, hiring/selecting, compensating, planning succession (Campion et al., 2011; Spencer & Spencer, 1993). Results of this study may help to mitigate the negative effects of dispersion on partially dispersed teams by providing a base for leader training and selection activities. It may be used as a base for performance evaluation of partially dispersed team leader and member.

It is essential that competencies be included in job descriptions because a list of job responsibilities and the results of job tasks are not sufficient measures to ensure success; rather well-defined skill competencies for a position encourage job incumbents to work more effectively (Tas, La Brecque, & Clayton, 1996). This study provides a competency model consisting of twenty competencies needed to command a DMT. These competencies may be used to develop job description of DMT personnel.

3.4.2. Conclusion

While technology has allowed organizations to capitalize on benefits of comprising dispersed teams, dispersion presents formidable challenges to the team's functioning. There are satsifiying number of studies related to traditional teams, but it seems that dispersed teams need to be explored more. The aim of this study was to identify leadership competencies required to command a DMT. First, we developed a "Preliminary DMT Commander Competency Model" and compiled the model with a survey. We also defined the importance and required proficiency level of the competencies included in the "Preliminary DMT Commander Competency Model". Then, instead of proposing a long "laundry lists" of competencies, we developed a "DMT Competency Model" consisting of twenty competencies. In this model we proposed ten core competencies, five DMT commander competencies and five DMT member competencies. Although, we could not come across specific studies related to competency model of dispersed team leaders or staff in military context, competencies in our model correlated with challenges discussed in dispersed team literature.

We do not consider that partially dispersed teams have completely different dynamics than collocated, but our study showed that due to the effects of dispersion, dispersed teams have more demanding work conditions and require more qualified leadership.

This study contributes to the understanding of leadership in partially dispersed team and may support the practitioners to overcome the challenges stemming from dispersion.

PART 2: ROLE OF COMPETENCIES ON WORK ENGAGEMENT AND CAREER COMPETENCIES

CHAPTER 4: CONCEPTUAL BACKGROUND AND LITERATURE REVIEW ON WORK ENGAGEMENT AND CAREER COMPETENCIES

4. CONCEPTUAL BACKGROUND AND LITERATURE REVIEW ON WORK ENGAGEMENT AND CAREER COMPETENCIES

4.1. Introduction

Military jobs involve demanding physical and psychological work conditions (Krueger, 2001), and studies convincingly showed that work and personal characteristics affect work engagement (Schaufeli & Taris, 2014). Research also showed that career competencies affect the perception of work conditions as well as work engagement (Akkermans et al., 2013b). However, we recognized that there is insufficient research on work engagement using JD-R theory as a theoretical framework, and role of competencies on work engagement and career competencies was not studied before in military context. In order to fill this gap, we aimed to investigate the role of leadership competencies, which we defined in our competency model, on work engagement and career competencies of leaders in military context.

Considering the state of the art, this is one of the limited number of studies which integrates competencies in JD-R model (Bakker & Demerouti, 2014) and Career Competencies model (Akkermans et al., 2013a). In the following section, we begin by presenting the conceptual background and literature review on work engagement and competencies. Then, we describe the research method and findings of our study concerning the role of competencies on work engagement and career competencies of leaders in military context.

4.2. Work engagement

Work engagement studies flourished due to emergence of the so-called positive psychology movement in academia at the turn of the century and have nowadays become one of the most examined topics in the organizational field. Work engagement is the mental state where employees feel full with physical energy, are enthusiastic about the content of their work and the things they do, and are so immersed in their work activities that time seems to fly (Bakker & Demerouti, 2017). Work engagement results with the interaction of work and personal charactersitics and influence employee health, well-being, and motivation (Schaufeli & Taris, 2014). Engaged employees are happier and healthier than non-engaged employees, and able to create their own resources (Bakker, 2011). They perform better and play a crucial role in gaining competitive advantages achieving high productivity and ensuring low turnover (Gilbert, 2011). Work engagement also associates with important positive outcomes such as job satisfaction, organizational commitment, organizational citizenship behavior (Saks & Gruman, 2014).

The theoretical framework that has been most often used for investigating the antecedents of work engagement is Job Demands - Resources model. During the past decade, the model has been used to predict work engagement, burnout and related organizational outcomes (i.e. commitment, work enjoyment, connectedness), and to predict consequences of these experiences (i.e. job performance and sickness absenteeism). The JD-R model was first introduced in the literature at the beginning of the century (Demerouti et al., 2001) and nowadays, matured into a theory with the results of increasing number of studies (Bakker & Demerouti, 2014).

4.3. The Job Demands-Resources (JD-R) Theory

The JD-R theory was built on the flexible conceptualization of psychosocial work conditions (job demands and job resources), processes, interaction and reversed casual relationship which develop due to psychosocial work conditions. In addition, the theory is extended with the integration of related constructs such as personal resources and job crafting. The model, which depicts the relationship among the components of the theory is presented in Figure 4.1.
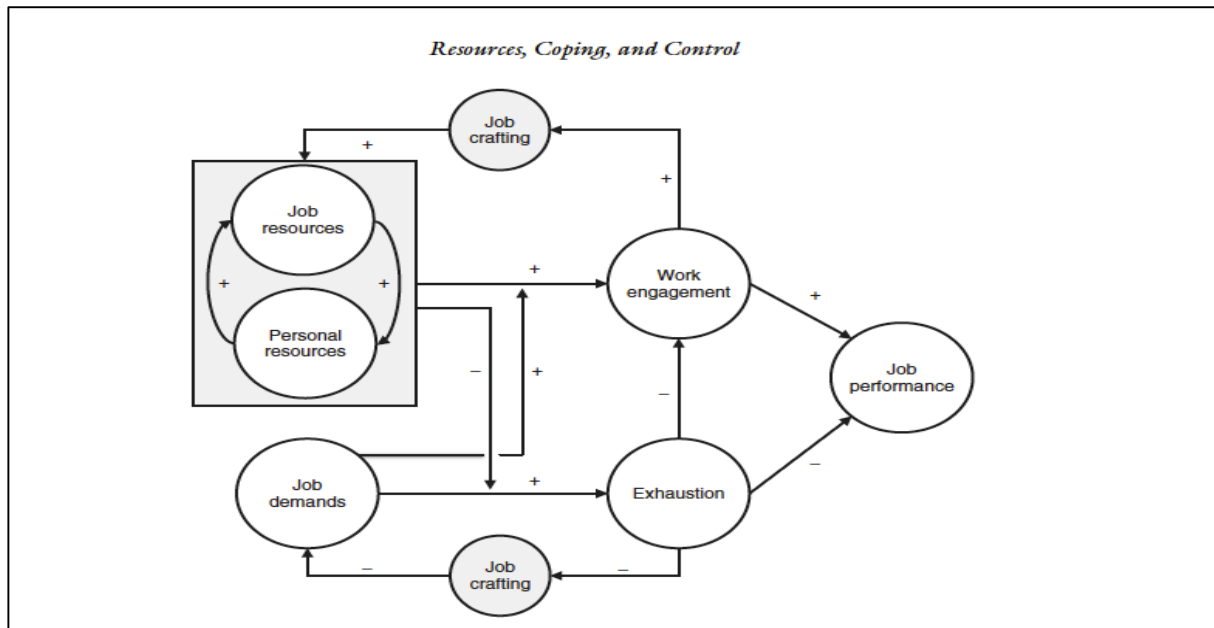
Figure 4.1. The Job Demands–Resources Model (Bakker & Demerouti, 2014)

4.3.1. Psychosocial work conditions: Job resources and job demands

According to the theory, regardless of the type of a job or occupational group, all types of job characteristics can be classified in one of two categorizes: job demands and job resources (Bakker & Demerouti, 2017), which lead to increased wellbeing (e.g., work engagement) or decreased wellbeing (e.g., emotional exhaustion) (Akkerman et al., 2013b).

Job demands refer to those physical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological (cognitive and emotional) effort or skills and therefore associated with certain physiological and/or psychological costs (Bakker & Demerouti, 2007, p. 312). Job demands lead to decreased work engagement (Baker & Demerouti, 2014) and other negative outcomes such as absenteeism, depression, turnover intention, physical ill health, psychosomatic health complaints, accidents and injuries (Schaufeli & Taris, 2014).

Examples of job demands are work overload, role conflict, role ambiguity. Although job demands are not necessarily negative, they may turn into job stressors when meeting those demands require high effort from which the employee fails to recover adequately (Meijman & Mulder, 1998).

Researchers, who conducted a meta analysis, distinguished job demands as challenges and hindrances and proposed that challenge demands trigger positive emotions and cognitions that result in active, problem-focused coping styles reflected in increased engagement; hindrance demands trigger negative emotions and cognitions that result in passive, emotion-focused coping styles reflected in decreased engagement (Crawford, LePine & Rich, 2010).

According to Crawford et al. (2010), not only job resources but also challenge demands trigger a motivational process and lead to increased engagement, which in turn result with performance.

Job resources refer to physical, social, psychological or organizational aspects of the job that are: (a) functional in achieving work goals; (b) reduce job demands and the associated physiological and psychological costs; or (c) stimulate personal growth, learning, and development (Bakker, 2011; Bakker & Demerouti, 2007). Job resources have both intrinsic and extrinsic motivational role at work: an extrinsic motivational role because job resources are needed in achieving work goals, and an intrinsic motivational role because job resources may foster employees' growth, learning and development, and thus satisfy the basic psychological needs of autonomy, belonging and competence (Van den Broeck, Vansteenkiste, De Witte & Lens, 2008; Bakker & Demerouti, 2007). For instance, proper feedback fosters learning, thereby increasing job competence, whereas decision latitude and social support satisfy the need for autonomy and the need to belonging, respectively (Bakker & Demerouti, 2007).

Job resources possibly exist at the following levels within an organisation: (1) at the organisational level (i.e. growth opportunities, remuneration, job security), (2) at the level of the organisation of work role (i.e. role clarity, participation in decision-making), (3) at the interpersonal level (i.e. team climate, supervisory and collegial support) and (4) at the task level (i.e. task significance, task performance feedback, task identity) (Bakker & Demerouti, 2007; Asiwe et al., 2015).

4.3.2. Two Processes: health impairment process and motivational process

Theory states that two types of working conditions, job demands and job resources, evoke two different underlying processes: motivational process and health impairment process (see Figure 4.1). In the health impairment process, high and chronic job demands lead to exhaustion, psychosomatic health complaints, and repetitive strain injury; in the motivational process, job resources lead to increased levels of motivation, work enjoyment, and work engagement (Bakker, Demerouti, & Schaufeli, 2003). The reasons for these unique effects are that job demands basically cost effort and consume energetic resources, whereas job resources fulfil basic psychological needs, like the needs for autonomy, relatedness, and competence (Bakker, 2011; Deci & Ryan, 2000; Nahrgang, Morgeson & Hofmann, 2011).

4.3.3. Job demands and resources interactions

According to JD-R theory, job demands and resources interact in predicting occupational well-being. There are two possible ways in which demands and resources may have a combined effect on well-being. On one hand, job resources buffer the impact of job demands on strain and on the other hand, job demands amplify the impact of job resources on motivatio/engagement (Bakker & Demerouti, 2007; Seppälä, 2013). Research has shown that job resources become salient and have the strongest positive impact on work engagement when job demands are high. In particular, when an employee is confronted with challenging job demands, job resources become valuable and foster dedication to the tasks at hand (Bakker & Demerouti, 2014).

4.3.4. Reversed causal relationships

Althoug job demands lead health-related negative outcomes (e.g., exhaustion) and job resources lead motivational outcomes (e.g., work engagement), conversely, some studies have shown that job strain, including burnout, may also have an impact on job demands; and positive organizational outcomes such as mental health, job satisfaction, work-related flow may also have an impact on job resources over time (De Lange, Taris, Kompier, Houtman, and Bongers, 2005; Salanova, Bakker and Llorens, 2006). That is, employees experiencing strain or disengagement show behaviors that place additional demands upon them, and work engagement may facilitate the mobilization of job resources (Bakker & Demerouti, 2014).

4.3.5. Personal resources

Integration of personal resources extended the the JD-R model and theory (Bakker & Demerouti, 2014). Personal resources refer to an individual's sense of their ability to successfully control and impact upon their environment especially during challenging circumstances (Bandura, 1997; Hobfoll, Johnson, Ennis & Jackson, 2003). Typical examples of personal resources include self-efficacy, self-esteem, and optimism. Similar to job resources, personal resources are functional in accomplishing work goals, and they stimulate personal growth and development (Schaufeli and Taris, 2014).

Personal resources were integrated into the JD-R model basing on the reasoning that human behavior results from an interaction between personal and environmental factors (Schaufeli and Taris, 2014). Studies revealed that job resources predicted personal resources and work engagement; and personal resources and work engagement, in turn, predicted job resources (Xanthopoulou, Bakker, Demerouti, and Schaufeli, 2007; Xanthopoulou et al., 2009a). In another saying, job and personal resources independently or together predict work

engagement and have a particularly positive impact on engagement when job demands are high; engagement, in turn, positively affects job performance (Bakker, 2011).

4.3.6. Job Crafting

Another important extension of the JD–R model is the inclusion of job crafting. Research on antecedents of work engagement showed that job resources and challenge demands are generally the most important predictors of motivation and work engagement, which is positively related to job performance; hindrance demands hinder progress toward goals and effective performance (Cavanaugh, Boswell, Roehling & Boudreau, 2000; Bakker, Demerouti and Verbeke, 2004; Salanova, Agut and Peiro, 2005; Bakker & Demerouti, 2007). This implies that organisations may influence employee engagement and performance through job demands and resources, however, at the individual level, employees may also shape job tasks and interactions in order to create conditions in which they can work healthily and be well motivated (Petrou, Demerouti, Peeters, Schaufeli, and Hetland, 2012).

The process of employee's shaping their jobs is defined as job crafting (Wrzesniewski & Dutton, 2001). Physical changes refer to changes in the form, scope, or number of job tasks, whereas cognitive changes refer to changing how one sees the job (Bakker & Demerouti, 2014). Motivation for job crafting arises due to three individual needs. First, employees engage in job crafting because they have the need to take control over certain aspects of their work in order to avoid negative consequences such as alienation from work. Second, employees are motivated to change aspects of their work in order to enable a more positive sense of self to be expressed and confirmed by others. Third, job crafting allows employees to fulfill their basic human need for connection to others (Wrzesniewski & Dutton, 2001).

Through job crafting, employees proactively modify aspects of their job to create a better fit between their job and their personal characteristics (Akkerman & Tims, 2017). In another words, job crafting enables employees to fit their jobs to their personal knowledge, skills, and abilities on the one hand and to their preferences and needs on the other (Bakker, 2011). From a JD-R perspective, employees may proactively change their own job demands and job resources in the form of four different types of behaviors: (a) increasing structural job resources; (b) increasing social job resources; (c) increasing challenging job demands; and (d) decreasing hindrance job demands (Tims, Bakker and Derks, 2013; Demerouti &Bakker, 2014).

4.4. Studies testing JD-R model

In the previous pages we presented the tenets of JD-R theory, in the following pages, we will present the empirical studies which are relevant to the research objective and JD-R theory enhancement.

4.4.1. Job demand and work engagement

Job demands are negatively valued aspects of the job (Schaufeli & Taris, 2014) and studies proved that job demands have a negative impact on work engagement (e.g., Bakker & Demerouti, 2014; 2017). Although number of job demands have been studied in work engagement literature (i.e. Job insecurity, physical demands, work pressure, work overload, role conflict, role ambiguity, interpersonal conflict, etc.; Schaufeli & Taris, 2014), for research aimed at increasing well-being in military organizations, researchers (Bliese & Castro, 2003) suggested focusing on relatively common stressors. Since we were interested in relatively general outcomes, we focused on work overload and role conflict that were identified as typical stressors in prior military research (Johnson & Stinson, 1975; Jex & Bliese, 1999; Jex, Bliese, Buzzell & Primeau, 2001; Tremblay & Messervey, 2011; Sharma, 2015).

Work overload is an acute stressor that measures an individual's perception that he/she has too many tasks to finish in a given time (Greenglass, Burke & Moore 2003). It has been cited as a major strain on employees' physical and mental health and on organizations' overall profitability (Robinson & Griffiths 2005; Jones, Chonko, Rangarajan & Roberts, 2007). Excessive workload can make an individual believe that the job does not allow them to produce their best work and that their true capabilities are neither recognized nor adequately rewarded. (Mulki, Lassk & Jaramillo, 2008).

Demerouti et al. (2001) found that work overload is negatively related to work engagement. According to Schaufeli and Bakker (2004) work overload is closely related to psychological and physiological strains, including burnout which is the contrary of work enagagement. Main (2011) showed that work overload is a significant predictor of poor work engagement. Moreover, Taştan (2014) showed that work overload has a negative relationship with vigor and dedication, which are the components of work engagement. It has been also confirmed that work overload has influences on various counter-productive problems in the workplace, including dissatisfaction, emotional exhaustion, job burnout and intent to leave (Bakker, Demerouti & Euwema, 2005; Knudsen, Ducharme & Roman, 2009; Morter, 2010).

Role conflict and role ambiguity are the main generic stressors isolated in the broader management literature. The first one is the result of conflicting expectations and the second one

is the result of unclear expectations (Kahn, Wolfe, Quinn, Snoek & Rosenthal, 1964). According to the researchers, both are among the two most widely recognized sources of psychological strain (Low, Cravens, Grant & Moncrief, 2001; Netemeyer, Brashear-Alejandro & Boles, 2004; Avlonitis & Panagopoulos, 2006; Morter, 2010). Jawahar, Stone and Kisamore (2007) stated that employees experiencing role conflict may come to believe that they cannot successfully perform the job and therefore, they may be forced to invest additional resources into their work role for fear of losing their job status. In the study of Wilkerson and Bellini (2006) role conflict, role ambiguity, and job overload have been identified as organizational factors associated with burn out in school counselors. Jawahar et al. (2007) and Turgut (2011) addressed that as a result of perceived role conflict, an additional investment of resources into the work role could lead to negative states including dissatisfaction and psychological strain.

4.4.2. Job resources and work engagement

As explained before, job resources are positively valued aspects of the job (Schaufeli & Taris, 2014). They reduce job demands, have motivational role and lead work engagement. (Bakker et al., 2005; Bakker & Demerouti, 2014). Organizational leaders are prominent within military organizations (Alarcon, Lyons & Tartaglia, 2010) and leadership behaviors can buffer the stressors experienced by soldiers (Britt, Davison, Bliese & Castro, 2004). According to the literature, clarifying roles, and supporting and developing subordinates are important leadership behaviors for reducing stress, performance and positive organizational outcomes (i.e. job satisfaction, employee commitment) (Yukl, 2002). In that sense, we focused on role clarity, social support and possibilities for development as specific job resources in this study.

Role clarity is defined as the extent to which individuals clearly understand the duties, tasks, objectives and expectations of their work roles (Katz & Kahn, 1978; Hinkin & Schriesheim, 2008). Therefore, role ambiguity, which is the opposite of and inversely interchangeable with role clarity (Rizzo, House & Lirtzman, 1970), occurs when individuals are uncertain with regard to what is expected of them. Role clarification is aimed at making employees capable of meeting expectations and navigating efficiently in the organization (Katz & Kahn, 1978; Saks, Uggerslev & Fassina, 2007).

A fact of organizational life is that some amount of ambiguity always exists. Most employees are able to perform in their various roles despite the lack of clarity (Ivancevich & Donnelly, 1974), however, when ambiguity is high, the individual faces the difficulty of pursuing job assignments because of an inability to modify them (Lazarus & Folkman, 1984). On the other hand, when role ambiguity is low (role clarity is high), employees' knowledge of

what is expected of them and how to achieve these expectations are high (Griffin, Neal & Parker, 2007).

Role clarity or its opposite role ambiguity, is widely recognized as a key predictor of employee behaviours, and professionals who lack role clarity are unlikely to be fully productive and effective (Donald, Bryant-Lukosius, Martin-Misener, Kaasalainen, Kilpatrick, Carter & DiCenso, 2010). For employees, the absence of role clarity (i.e. role ambiguity) is a stressor that is negatively associated with several relevant organizational outcomes such as in-role performance (Gilboa, Shirom, Fried & Cooper, 2008), organizational citizenship behaviours (Eatough, Chang, Miloslavic & Johnson, 2011), organizational commitment, and job satisfaction (Slattery, Selvarajan & Anderson, 2008). Although role stressors, particularly ambiguity and conflict, are likely to be viewed as hindering employees' ability to attain personal and professional goals at work (LePine, Podsakoff & LePine, 2005), some researchers found that employees with role clarity are likely to be more competent at work since they understand what and how to do (Baron & Armstrong, 1998; Avinandan & Neeru, 2006). In a recent study, which investigates the role of colleague support and role clarity in enhancing work engagement, Choo (2017) found that role clarity enhances work engagement.

Studies conducted in military context stated that role clarity is one of the fundamental elements for the success of complex military organizations (Maniscalco, Aubry & Rosato, 2008) and could promote trust in small military teams (Curnin, Owen, Paton, Trist & Parsons, 2015).

Social support can be defined as "a network of connections with other human beings that can provide assistance, support, and help for a person" (Lambert, Hogan and Altheimer, 2010). In this study, two forms of social support are taken into account: supervisor support and colleague support. Social support derived from either the supervisor or work colleagues is an important resource for employees to cope with stress (Sears, 1983), helps employees interpret and understand their social reality (Ng & Sorensen, 2008) and is positively associated with work engagement (Leiter & Maslach, 1988; Schnorpfeil, Noll, Wirtz, Schulze, Ehlert, Frey & Fischer, 2002; Bakker & Demerouti, 2008).

According to research, social support is negatively associated with the main work stressors, such as role conflict, role ambiguity, work overload and resource inadequacy, and has a strong impact on employees' well-being (Bartram, Joiner & Stanton, 2004; Van Emmerik, Euwema & Bakker, 2007).

Possibilities for development (or growth opportunity) is one of the commonly studied job resources in work engagement literature. According to American Psychological Association

("Employee Growth & Development", 2016), opportunities for growth and development help employees expand their knowledge, skills and abilities, and apply the competencies they have gained to new situations. The opportunity to gain new skills and experiences can increase employee motivation and job satisfaction, and helps workers more effectively manage job stress. An employee's perception of internal growth and development opportunities is one of the more important predictors of employee engagement and as the perceived growth and development opportunities increase, so will the employee engagement ("Growth and Development Opportunities and Employee Engagement", 2016).

Research showed the positive relationships between work engagement and growth opportunities (Rothmann, 2007; Halbesleben, 2010; De Beer, Rothmann & Pienaar, 2012). Jackson, Rothmann & Van de Vijver (2006) stated that job resources such as organizational support, growth, and career opportunities have strong effects on work-related well-being. In a recent study, Joo and Lee (2017) investigated the effects of perceived organizational support and psychological capital on happiness in employees' work (i.e. work engagement), careers (i.e. career satisfaction) and lives (i.e. subjective well-being) and suggested that human resources and organization development professionals can enhance employees' happiness not only in their work and careers but also in their lives by improving growth opportunity, performance management, and compensation system.

4.4.3. Personal resources and work engagement

Personal resources (self-efficacy, self-esteem, and optimism) are understood as personality capacities that enable an individual to function effectively, particularly in pressuring and difficult situations (Kalandyk, Penar-Zadarko & Krajewska-Kułak, 2016).

Research to date showed that personal resources directly effect work engagement and have a mediator role on the relationship between between job characteristics and work engagement. For example, Lorente, Salanova, Martinez, and Schaufeli (2008) found that emotional and mental competencies predicted levels of burnout and engagement. Regarding the mediator role of personal resources, Xanthopoulou et al. (2007) examined the role of three personal resources in the JD-R model and found that personal resources partially mediated the relationship between job resources and engagement/exhaustion and influenced the perception of job resources. Xanthopoulou et al. (2007) concluded that personal resources play a significant role in the JD-R model since, together with job demands and job resources, they contribute in explaining variance in exhaustion and work engagement. In the studies of Xanthopoulou et. al (2009a, 2009b), results showed that job and personal resources are

mutually related and personal resources can be independent predictors of work engagement. That is, job resources (i.e., supervisor coaching and team atmosphere) contribute to employees' personal resources, which, in turn, contribute to engagement; and employees who have high levels of personal resources (optimism, self-efficacy, resilience, and self-esteem) are well able to mobilize their job resources and generally are more engaged in their work.

Moreover, research showed that personal resources influence the perception of job characteristics. For example, Bhagat and Alie (1989) examined moderating effect of sense of competence on the stress-satisfaction relationship of 276 elementary school teachers. They found that when organizational stress was high, individuals with a high sense of competence reported greater satisfaction with work and co-workers, and reduced feeling of depersonalization, compared to those in lower sense of competence. When perceived stress was low, highly competent individuals were less satisfied with coworkers than were individual with a low sense of competence.

Besides other personal resources, researchers particularly focused on the relationship between self-efficacy and work engagement. As a personal resource, self-efficacy describes individuals' beliefs in their capabilities to exercise control over challenging demands and over their own functioning (Luszczynska, Gutiérrez-Doña & Schwarzer, 2005). Self-efficacy can be characterized mainly as being competence-based and action-related (Bandura, 1997; Bandura, Pastorelli, Barbaranelli & Caprara, 1999) and self-efficacious individuals may experience a low level of negative emotions in a threatening situation and, as a result, may feel capable of mastering the situation (Bandura, 1997).

Research indicated that self-efficacy has a positive impact on work engagement and its consequences (i.e. motivation, performance). For example, previously, the meta-analytic study of Stajkovic and Luthans (1998) showed that self-efficacy is strongly related to work-related performance. Llorens, Schaufeli, Bakker, and Salanova (2007) examined the mediating role of efficacy beliefs with regard to the motivational process of the JD-R model. Results showed that efficacy beliefs play a mediating role between task resources and engagement and engagement increases efficacy beliefs. In addition, Xanthopoulou, Baker, Heuven, Demerouti, and Schaufeli (2008) investigated the mediating role of self-efficacy in the relationship between job resources (i.e., colleague support) on the one hand, and work engagement and performance on the other hand. Results showed that colleague support and self-efficacy are related to performance, through work engagement. In a recent study, Lauermann and König (2016) found that teachers' professional competence (their professional knowledge, skills, beliefs and motivation) has positive association with teaching self-efficacy, and professional competence has the potential

to function as a protective factor against burnout via its positive association with teachers' confidence in their ability to master teaching-related tasks.

Studies investigating role of personal resources showed that personal resources influence perception of job characteristics (Bhagat & Alie, 1989; Xanthopoulou et al., 2007); independently or together with job resources predict work engagement and have a particularly positive impact on engagement when job demands are high; engagement, in turn, positively affects job performance (Bakker, 2011). In addition, professional competence has positive association with self-efficacy, self-efficious individuals report high levels of engagement and self-efficacy play a mediating role between task/job resources and work engagement. (Stajkovic & Luthans, 1998; Llorens et al., 2007; Xanthopoulou et al., 2008; Lauermann & König, 2016).

4.4.4. Job crafting and work engagement

Job crafting is the proactive behaviour of engaged employees. Tims et al. (2013) stated that engaged employees increase their job resources (e.g., ask for feedback and help) and challenge job demands (e.g., start a new project, learn to master a new skill), and decrease their hindrance job demands (e.g., reduce workload and bureaucracy) in order to optimize their working environment and stay motivated.

In a study focusing on daily job crafting and work engagement, researchers conceptualized job crafting as seeking resources, seeking challenges, and reducing demands. Results showed that day-level seeking challenges (but not resources) is positively associated with day-level work engagement, whereas day-level reducing demands is negatively associated with day-level work engagement (Petrou et al., 2012).

Recently, in a longitudinal study, researchers found that employees who crafted their job resources in the first month of the study showed an increase in their structural and social resources over the course of the study (2 months) and this increase in job resources is positively related to employee well-being (increased engagement and job satisfaction, and decreased burnout) (Tims et al., 2013).

Studies showed that job crafting is the proactive behaviour of engaged employees. In order to optimize their working environment and stay motivated, on one hand, they increase their job resources (i.e. asking for feedback from their supervisor and mobilizing their social network) and challenge demands (i.e. starting new projects), on the other hand, they decrease their hindrance job demands (e.g., reduce workload and bureaucracy).

4.5. Studies about well-being in military context

Well-being at work, which is plentifully studied for different types of job or occupational

groups, has been poorly studied in military context using JD-R model as theoretical framework. At the same time, it was shown that, considering 11 different job demands which can reasonably be expected to evoke stress, military jobs ranked as the most stressful occupation of 2017 in United States ("Most Stressful Jobs", 2017).

Although there are stressors peculiar to only military such as isolation, powerlessness, boredom, danger, combat experiences, combat injury, deployment length etc. (Krueger, 2008; Harms, Krasikova, Vanhove, Herian & Lester, 2013), research showed that predictors of work engagement show similarities with civil organizations. For example, Rabie (2005) explored the possible stressors (job demands and/or job resources) in the military nursing-student environment, their effects on students (burnout or engagement) and on their academic performance in South African Military Health Services. Results showed that job demands (consisting of overload, organisational influences and work-life balance) have a strong relationship with burnout (consisting of exhaustion, cynicism and cognitive weariness), and job resources (consisting of social support, growth and advancement, contact with others and organisational support) have a strong relationship with work engagement.

Alarcon et al. (2010) explored the organizational antecedents of employee engagement in US Air Force. Results showed that peer group interactions, organizational climate, and role clarity were all significant predictors of engagement and leadership's influence on engagement was fully mediated by organizational climate and role clarity. Indicating that leaders impact employee engagement through their influence on the environment and through employees' perceptions of role clarity.

Van Eetveldt and Van Den Tooren (2013) explored the role of job demands measured as work load (work overload and work underload) and job insecurity, and job resources measured as social support (supervisor support and co-worker support) and communication (information, communication quality and recognition) on work engagement and burn out in a military downsizing context, which puts additional demands on employees and affect work attitudes and health. Results showed that co-worker support and recognition positively associated with work engagement and negatively associated with burnout.

Wang and Chen (2014) explored the role of work stress and social support on physical and mental health of military research and development (R&D) personnel. Results showed that R&D personnel's work stress has a negative effect on physical and mental health, and both of supervisor support and coworker support had positive influences on physical and mental health.

Recently, Johansen, Martinussen & Kvilvang (2015) explored the role of military identity, which comprises three dimensions professionalism, individualism, and idealism, on

work engagement and burnout among members in the Norwegian Army. Results showed that professionalism has a moderate positive relationship with work engagement, individualism has a negative relationship with work engagement and positive relationship with burnout. In addition, Sriphong (2015) examined the work engagement of the Royal Thai Volunteer Rangers and found that career commitment and work motivation have a significant positive correlation with work engagement.

In the previous sections, we presented the JD-R theory and the studies in nonmilitary and military organizations. In following sections, we will discuss the possible role of competencies on building blocks of JD-R model (Psychological work conditions, personal resources processes and work engagement).

4.6. Competencies and JD-R Model.

4.6.1. Competencies and work engagement

According to the literature, the competency model (Boyatzis, 1982) and the JD-R model (Bakker & Demerouti, 2014) particularly focus on performance. The first states that maximum performance occurs when competencies, job demands and organizational environment "fit" (Boyatzis, 1982) and the second states that interaction of job demands, job resources, and personal characteristics result with work engagement, and, in turn, performance (Bakker, 2011).

Although specific role of competencies on work engagement has been poorly studied using JD-R theory as a theoretical framework, extant literature showed that competency related variables such as self-efficacy, personal resources, career competencies, work abilitiy and some specific competencies (i.e. foundational competencies) have significant effect on work engagement (Llorens et al., 2007; Xanthopoulou et al., 2008; Akkermans et al., 2013b; Airila, Hakanen, Schaufeli, Luukkonen, Punakallio & Lusa, 2014; Haruna, Haruna, Marthandan & Marthandan, 2017; Ripin & Izzati, 2017).

Self-efficacy is a competency component (Spencer & Spencer, 1993; Kanfer & Ackerman, 2005), which describes individuals' beliefs in their capabilities to exercise control over challenging demands and over their own functioning (Bandura, 1997; Luszczynska et al., 2005). Several researchers reported that self-efficacious employees experience higher levels of engagement (Salanova et al., 2006) and self-efficacy is strongly related to work-related performance (Stajkovic & Luthans, 1998). Previously, Llorens et al. (2007) considered self-efficacy as a resource and examined the mediating role of efficacy beliefs with regard to the motivational process of the JD-R model. Results showed that efficacy beliefs play a mediating role between task resources and engagement and engagement increases efficacy beliefs.

Additionally, Xanthopoulou et al. (2008) investigated the mediating role of self-efficacy in the relationship between job resources (i.e., colleague support) on the one hand, and work engagement and performance on the other hand, results showed that colleague support and self-efficacy are related to performance, through work engagement.

Career competencies are defined as "Knowledge, skills, and abilities central to career development (Akkermans et al., 2013a). Akkermans et al. (2013b) argued that career competencies are not only a relevant concept for career success, but also for employee well-being, and examined whether career competencies contribute to employee well-being in the view of COR theory and JD-R model. Results showed that in line with the principles of COR theory (Hobfoll, 2002), which states that so-called resource caravans may develop in which resources can create additional resources, which, in turn, foster work engagement, career competencies influence employee well-being in a similar way as personal resources.

Ability is another component of competency (Spencer & Spencer, 1993). Work ability is workers' ability to carry out their work or having the occupational competence, which is a functional capacity to meet the requirements of the job (Tengland, 2011). Airila et al. (2014) studied the role of work ability as a health-related resource that may boost work engagement and as a health-related outcome of the motivational process of JD-R model. Results showed that employees' work ability may function as a health-related resource that builds engagement.

Studies related to role of some specific competencies on work engagement also showed similar results, for example foundational competencies, which refer to the knowledge, skills and abilities that people are expected to demonstrate to ensure effective performance in their respective work settings (Williams Van Rooij, 2013). Recently, researchers examined the impact of foundational competencies on work engagement basing on the conceptual similarities with career competencies and personal resources. Results showed that foundational competencies have a significant positive effect on work engagement (Haruna et al., 2017; Ripin & Izzati, 2017).

4.6.2. Psychological work conditions and competency

A person's competencies describe what he or she can do, not necessarily what he or she does, nor does all the time regardless of the situation and setting (Boyatzis, 1982, p.12). Deficiency or proficiency in a competency, namely competence, and other related factors (i.e. mood of the employee, practice facilities, ect.) influence performance (Rethans et al., 2002). Necessary proficiency levels for the effective performance of organization are defined in a competency model. Different levels of proficiency (i.e. novice, experienced beginner, practitioner, knowledgeable practitioner, expert, virtuoso, maestro, ect.) are included in a

competency model (Ennis, 2008). Today, "Dreyfus' model of skill acquisition" or its derivatives are being widely used in order to define proficiency levels. Dreyfus & Dreyfus (1980) developed this model by analyzing and systematizing descriptions of changes in the perception of the task environment and proposed that in the acquisition and development of a skill, an individual passes through five levels of proficiency: novice, advanced beginner, competent, proficient and expert. Definitions of these levels are presented in Table 4.1.

Table 4.1.: Definitions of proficiency levels (Lester, 2005)

Level of proficiency	Definition
Novice	Has an incomplete understanding, approaches tasks mechanistically and needs supervision to complete them.
Advanced Beginner	Has a working understanding, tends to see actions as a series of steps, can complete simpler tasks without supervision.
Competent	Has a good working and background understanding, sees actions at least partly in context, able to complete work independently to a standard that is acceptable though it may lack refinement.
Proficient/ Advanced	Has a deep understanding, sees actions holistically, can achieve a high standard routinely.
Expert	Has an authoritative or deep holistic understanding, deals with routine matters intuitively, able to go beyond existing interpretations, achieves excellence with ease.

One important aspect of the Dreyfus' model is that the model and the levels reflect changes in two general aspects of skilled performance: One is a movement from reliance on abstract principles to the use of past, concrete experience as paradigms. The other is a change in the perception and understanding of a demand situation so that the situation is seen less as a compilation of equally relevant bits and more as a complete whole in which only certain parts are relevant (Benner, 1982). That is, the model and the levels reflect individual's perception of work conditions. An example scale developed basing on the Dreyfus model is presented in the Table 4.2.

Besides Dreyfus' model, one of the most widely quoted model in discussions of proficiency level is Miller's Pyramid/Prism of clinical competence (Figure 4.2.). Miller (1990), a psychologist, proposed a framework for assessing levels of clinical competence called "Miller's Triangle". Originally, Miller represented his framework as a two dimensional pyramid, then researchers developed the model and adapted other domains (i.e. skills, attitudes, mastery) and thus called it 'Miller's Prism' (Mehay, 2010).

Table 4.2.: Proficiency levels scale [By Institute of Conservation (London) basing on the Dreyfus model of skill acquisition (Lester, 2005, p. 4)]

Level	Knowledge	Standard of work	Autonomy	Coping with complexity	Perception of context
1-Novice	Minimal, or 'textbook' knowledge without connecting it to practice	Unlikely to be satisfactory unless closely supervised	Needs close supervision or instruction	Little or no conception of dealing with complexity	Tends to see actions in isolation
2-Beginner	Working knowledge of key aspects of practice	Straightforward tasks likely to be completed to an acceptable standard	Able to achieve some steps using own judgement, but supervision needed for overall task	Appreciates complex situations but only able to achieve partial resolution	Sees actions as a series of steps
3-Competent	Good working and background knowledge of area of practice	Fit for purpose, though may lack refinement	Able to achieve most tasks using own judgement	Copes with complex situations through deliberate analysis and planning	Sees actions at least partly in terms of longer-term goals
4-Proficient/ Advanced	Depth of understanding of discipline and area of practice	Fully acceptable standard achieved routinely	Able to take full responsibility for own work (and that of others where applicable)	Deals with complex situations holistically, decision-making more confident	Sees overall 'picture' and how individual actions fit with it
5-Expert	Authoritative knowledge of discipline and deep tacit understanding across area of practice	Excellence achieved with relative ease	Able to take responsibility for going beyond existing standards and creating own interpretations	Holistic grasp of complex situations, moves between intuitive and analytical approaches with ease	Sees overall 'picture' and alternative approaches; vision of what may be possible
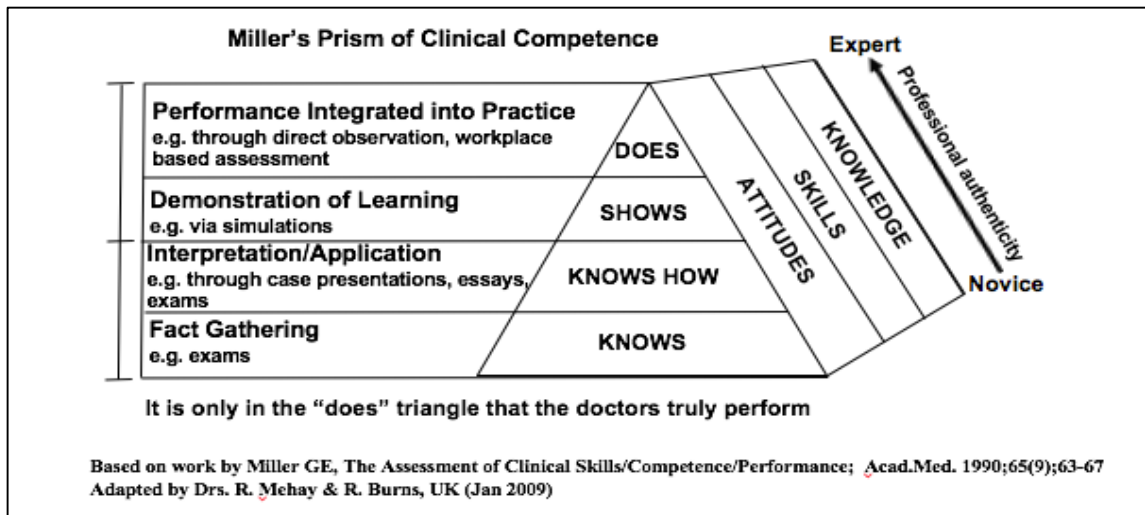
Figure 4.2.: Miller's Pyramid/Prism of clinical competence.

Miller's Pyramid Model classifies competence as knows, knows how, shows, or does. Based on the categorization, one is classified as a novice to an expert according to his or her professional authenticity. Knows and knows how correspond to the knowledge domain-which refer to those lacking experience (or novices). Shows how and does correspond to the behavior domain: the shows how level refers to one's performance on artificial simulation exercises, such as the objective structured examination, while the does level links with one's practice in the workplace. According to Miller's Prism, the lower two levels of pyramid only test cognition (or knowledge) and this is the area where novices usually sit, and the upper two levels test behaviour, and demonstration of behaviour corrolates with the professional authenticity (Mehay, 2010).

The models mentioned above also show that proficiency level of an individual is an indicator of competence and autonomy at work. That is, high proficiency level means high competence and autonomy at work. For example, a beginner level individual is able to achieve some steps using own judgement; however, supervision is needed for overall task (less autonomy), and appreciates complex situations; but only able to achieve partial resolution (less competence); on the other hand, a proficient level individual is able to take full responsibility for own work (more autonomy) and deals with complex situations holistically (more competence) (see Table 4.2). Here, we may suggest that gaining proficiency on a competency may fulfil basic psychological needs, like the needs for competence and autonomy, play a motivational role and lead to well-being through satisfaction of these needs (Ryan & Deci, 2000)

In a recent study, basing on the Dreyfus' and Benner's model, Cates (2014) created a model for the assessment of multidimensional competency of Neonatal Nurse Practitioners (NNPs) while performing in simulation. In this model, Cates (2014) developed operational definitions of proficiency levels basing on the observations what practitioners do at each stage of competency in clinical practice. Summary of the Cates (2014)'s observations is presented in the Table 4.3. According to this model, as the proficiency level of individual increases, perception of stress decreases and on the other hand expression of self-efficacy, situational awareness and proactive behaviours increase (See Table 4.3.)

Table 4.3. Summary of the Cates (2014)'s observations (Developed by basing on the operational definitions of proficiency levels (Cates, 2014, p. 500)

Level	Stress	Situational awareness	Leadership behaviors	Confidence to perform (Self-efficacy)
Novice	The novice NNP will often seem nervous, anxious, uncomfortable in their role, disorganized, and unsure of themselves (very indecisive).	The novice NNP does not display situational awareness.	The staff does not readily recognize the novice NNP as the team leader.	The novice will frequently lack the confidence to perform many critical aspects of care and/or patient management without frequently referring to their preceptors, guidebooks, or reference cards.
Competent	They will seem calm, confident, comfortable with their role, and organized and will often seem sure of themselves (decisive).	A competent NNP is has situational awareness based on experience.	The staff recognizes the competent NNP as the team leader.	The competent NNP will have the confidence to perform most critical aspects of care and/or patient management without frequently referring to their preceptors, guidebooks, or reference cards.
Expert	They will seem calm, confident, and comfortable with their role, well organized, and will be sure of themselves demonstrating no hesitation, and perform in a fluid manner.	The expert displays impeccable situational awareness.	The staff immediately recognizes the expert NNP as the team leader.	The expert NNP will have the confidence to perform all critical aspects of care and exceed by addressing additional aspects of care and/or patient management seamlessly.

To sum up, a competency is a potential which describes what an individual can do (Boyatzis, 1982), demonstration of behaviour, which has a casual relationship with performance (Spencer & Spencer, 1993) corrolates with the proficiency level of an individual (Miller, 1990; Mehay, 2010) and deficiency or proficiency in a competency or its components

influences performance (Rethans et al., 2002). Level of proficiency (i.e. novice, advanced beginner, competent, proficient, expert) is the reflection of change in the perception and understanding of a demand situation (Benner, 1982; Dreyfus & Dreyfus, 1980), demonstration of competence corrolates with the proficiency levels of an individual in a competency or its componenets (knowledge, skill, attitude, ect.), and as the proficiency level of individual increases, perception of stress decreases and on the other hand expression of self-efficacy, competence and autonomy increase (Lester, 2005; Cates, 2014).

From a JD-R theory perspective, we may conclude that job demands and organizational environment defined in a competency model (see Boyatzis' model presented in Figure 2.5.) refer to antecedents of work engagement, namely, job resources and job demands of JD-R model. We may also conclude that proficiency level of an individual on a competency may affect the perception of job characteristics; gaining proficiency on a competency fosters self-efficacy, may play a motivational role at work through fulfilling basic psychological needs (like the needs for competence and autonomy), and in turn lead to work engagement.

4.6.3. Processes of JD-R theory and competency

JD-R theory proposes two underlying processes (health-impairment process and motivational process) and an interaction of job demands and resources in predicting work engagement (Bakker & Demorouti, 2014). (See Figure 4.1.)

As stated above, proficiency level of an individual on a competency may affect the perception of work conditions (Dreyfus & Dreyfus, 1980, Benner, 1982; Miller, 1990; Lester, 2005; Mehay, 2010). That is, a more competent individual may preceive more of the job demands as challenges and mobize job resources better. From a JD-R theory perspective, this means that proficiency level of an individual may affect the perception of job demands and job resources, and the variation in the perception of work conditions may affect the processes and interaction defined in the JD-R theory.

Proficiency level of an individual may affect the perception of job demands. For example, a competent or lower level individual may perceive work overload as job demand, on the other hand a proficient level individual may perceive work overload as a challenge demand. In the first case, on one hand perception of work overload as a job demand triggers a health impairment process which leads decreased well-being (e.g., emotional exhaustion) (second proposition of JD-R theory), on the other hand interacts with job resources perception and amplifies the impact of job resources on motivation/engagement (Third proposition of JD-R theory). In the second case, perception of work overload as a challenge demad triggers a

motivational process which leads increased work engagement (second proposition of JD-R theory) and, in turn, result with excellent performance (Crawford et al., 2010).

Moreover, proficiency level of an individual on a competency may affect the perception of job resources. For example, social support is one of the commonly studied job resource in JD-R literature. It is likely that an individual who has higher level of proficieny in teamwork competency will mobilize social support better than an individual who has lower level. In the first case, motivational process triggered due to perception of social support by a more proficient indvidual leads higher level of work engagement (second proposition of JD-R theory). In the second case, motivational process triggered due to perception of social support by a less proficient indvidual leads lower level of work engagement (second proposition of JD-R theory). In all cases proficiency level of an indvidual may increase or decrease the buffer effect of job resource on job demand (Third proposition of JD-R theory). (See figure 4.1.).

Additionally, job resources have an extrinsic or intrinsic motivational role at work: an extrinsic motivational role, because job resources are needed in achieving work goals, and an intrinsic motivational role, because job resources may foster employees' growth, learning and development, and thus satisfy the basic psychological needs of autonomy, belonging, and competence (Van den Broeck et al., 2008). It is likely that an individual who has higher level of proficieny on decision making competency will mobilize this job resource (decision latitude) beter than an individual who has lower level, and in turn, this mobilization may lead to satisfaction of basic psychological needs (i.e. autonomy) as well as work engagement.

Here, we may also suggest that gaining proficiency on a competency may indirectly fulfil basic psychological needs (like the needs for autonomy, relatedness, and competence) through perception of job resources.

4.6.4. Personel resources and competency

Personal resources refer to an individual's sense of their ability to successfully control and impact upon their environment, especially during challenging circumstances (Bandura, 1997) and typical examples of personal resources include self-efficacy, self-esteem, and optimism.

As a personal resource, self-efficacy describes individuals' beliefs in their capabilities to exercise control over challenging demands and over their own functioning. Self-efficacy does not address the expected consequences of successful completion of the behavior, only whether the performer feels he/she can execute the behavior in the given circumstances. That is, self-efficacy is more than the basic capability for carrying out a behavior, specifically, it is one's

confidence that they can carry out the behavior under challenging circumstances (Rodgers, Markland, Selzler, Murray & Wilson, 2014).

Personal judgment of self-efficacy is a construct that has evolved to explain why some individuals are unable or unwilling to execute behaviors that are clearly within their repertoire. According to Bandura (1983), there is a marked difference between possessing skills and being able to use them well in diverse circumstances. For this reason, different people with similar skills-or the same person on different occasions-may perform poorly, adequately, or exceptionally (Bouffard-Bouchard, 1990).

Perceived self-efficacy concerns people's beliefs in their capabilities to mobilize the motivation, cognitive resources, and courses of action needed to exercise control over events in their lives (Wood & Bandura, 1989) and represents the confidence that one can use the skills necessary to resist temptation, cope with stress, and mobilize resources required to meet the situational demands (Bandura, 1997). Self-efficacy is one of the mechanisms which predominates the level of operation and the events that take place in our life (Ventura, Salanova & Llorens, 2015).

Perceived self-efficacy can be characterized mainly as being competence-based, prospective, and action-related, it motivates behavior when the necessary skills and incentives are already in place (Bandura, 1986; 1997). Several researchers defined competency components as knowledge, skills, attitude and other characteristics like motives, values, trait and self concept (Knowles, 1975; Spencer & Spenser, 1993; Tucker and Cofsky, 1994). Self-concept includes self-confidence and self-efficacy, and both may be threshold variables that determine whether individual chooses even to engage a task (Kanfer & Ackerman, 2005). For example, on the one hand, if the goal is to run a mile in less than 10 minutes, many individuals with low self-efficacy may not even adopt the goal, and thus not fully devote effort to goal accomplishment. In this sense, having a self-efficacy that is too low for goal accomplishment may lead to disengagement from the task. On the other hand, if self-confidence is high, initial task engagement is a much higher probability outcome.

According to the literature above, we may conclude that although self-efficacy is a personal resource, in the view of competency approach, it is one of the underlying characteristics of a competency. It represents the confidence that one can use the skills necessary to cope with stress and mobilize resources required to meet the situational demands. Perception of self-efficacy motivates/predicts behavior when necessary skills and incentives are already in place. Together with self-confidence, it may be a treshold variable that determines task engagement and explains why some individulas outperform their counterparts at the same

level of ability or why some individuals are unable or unwilling to execute behaviors that are clearly within their repertoire.

In the previous pages, we discussed the possible role of competencies on JD-R model. As stated before, the second purpose of our study is to investigate the role of leadership competencies on career competencies. In the following pages, we will present the conceptual back ground and related literature on career competencies.

4.7. Career competencies

As explained before, competencies are central to performance (Spencer & Spencer, 1993; Chouhan & Srivastava, 2014) and career competencies are central to career development (Akkermans et al., 2013a). We may explain the the relationship between competencies and career competencies in the theoretical frame work of Social Cognitive Career (SCC) theory and Conservation of Resources (COR) theory.

SCC theory is grounded in Bandura's (1986) social cognitive theory, and explores how career and academic interests mature, how career choices are developed, and how these choices are turned into action. Theory states that this is achieved through a focus of three primary tenets: self-efficacy, outcome expectations, and goals (Lent, Brown & Hackett, 1994).

According to the theory, self-efficacy refers to the beliefs people have about their ability to successfully complete the steps required for a give task. Individuals develop their sense of self-efficacy from personal performance, learning by example, social interactions, and how they feel in a situation. Outcome expectations are the beliefs related to the consequences of performing a specific behavior. Typically, outcome expectations are formed thorough past experiences, either direct or vicarious (observed), and the perceived results of these experiences. Goals are seen as playing a primary role in behavior. A goal is defined as the decisions to begin a particular activity or future plan. Behavior is organized or sustained based on these previously set goals (Lent et al., 1994). SCC theory underlines that career interests are regulated by self-efficacy and an outcome expectation, which means people, will form lasting interests in activities when they experience personal competency and positive outcomes. On the contrary, a belief of low personal competency will lead people to avoid activities (Lent et al., 1994).

COR theory defines resources as things that people value with an emphasis on objects, states, conditions, and other things (Hobfoll, 1989) and categorizes personal characteristics that include mastery of skills as resources (Hobfoll & Lilly, 1993). According to COR theory, resources tend to generate other resources, thus creating resource caravans. Related to resource

investment, theory also states that individuals with resources are in a better position to invest those resources (Individuals with more resources are better positioned for resource gains.). As individuals gain resources, they are in a better position to invest and gain additional resources. This may lead a resource gain spiral and initial resource gains lead to future resource gains (Hobfoll, 1989; Hobfoll & Lilly, 1993; Hobfoll, 2002).

In the view of theories mentioned above, we may assume that employees acquire new skills, technical knowledge and problem-solving abilities through training and develop their competencies or in the view COR theory gain new resources. This result with self efficacy and interest/motivation to invest these resources in order to gain additional resources such as career competencies.

In a recent study, Akkermans et al. (2013a) developed a career competencies model consisting of three dimensions: reflective, communicative, and behavioral competencies, and each dimension contained two career competencies. According to the authors, reflective career competencies encompass reflection on motivation and reflection on qualities. Reflection on motivation refers to reflection on values, passions, and motivations with regard to the personal career; and reflection on qualities relates to reflection on strengths, shortcomings, and skills with regard to one's career. Communicative career competencies include networking and self-profiling. Networking pertains to the awareness of the presence and professional value of one's network, and the ability to expand this network for career-related purposes; and self-profiling refers to presenting and communicating one's personal knowledge, abilities, and skills to the internal and external labor market. Finally, behavioral career competencies encompass work exploration and career control. Work exploration relates to actively exploring and searching for work-related and career-related opportunities on the internal and external labormarket; career control relates to actively influencing learning and work processes related to one's career by setting goals and planning how to reach them. Akkermans et al. (2013a)'s study also showed that task performance and self-efficacy are significant correlates of career competencies.

According to the literature, personal resources and career competencies have conceptual similarities, for example, both are (1) related to evaluating one's ability to control and impact upon their environment successfully, (2) can be functional in achieving goals, and stimulating personal growth and development, (3) are malleable and open to development (Hobfoll, Johnson, Ennis & Jackson, 2003; Xanthopoulou et al., 2007; Xanthopoulou et al., 2009a; Akkermans et al., 2013a; 2013b).

Basing on the conceptual similarities, Akkermans et al. (2013b) integrated the career competencies in to JD-R model. Akkermans and his colleagues specifically tested three

structural models to determine the role of career competencies in the JD-R model. First, they tested whether career competencies mediated the relationship between job resources and work engagement; second, they tested whether job resources mediated the relationship between career competencies and work engagement; and third, they tested whether career competencies mediated the relationship between job demands and emotional exhaustion.

Results showed that (1) there is a positive relationship between career competencies and job resources, and between career competencies and work engagement; (2) career competencies mediate the relationship between job resources and work engagement; and (3) job resources mediate the relationship between career competencies and work engagement. Researchers suggested that job resources and career competencies may have a mutually reinforcing effect on employee well-being, similar to earlier findings with regard to job resources and personal resources (e.g., Xanthopoulou et al., 2009a), and career competencies may be considered a personal resource.

In a recent study, some researchers (Akkerman & Tims, 2017), basing on JD-R theory, examined a potential motivational process in which career competencies, as a personal resource, would enhance career success through expansive job crafting. They also suggested that career competencies may be considered a personal resource. As a result, studies showed that career competencies may be considered a personal resource and may have a reinforcing effect on employee wellbeing (Akkermans et al., 2013b; Akkerman & Tims, 2017).

4.8. Concluding remarks to literature review

JD-R theory helps us to understand, explain, and make predictions about employee wellbeing (e.g., burnout, health, motivation, work engagement) and job performance. According to JD-R theory there exists two work characteristics: job demands and job resources, and these two characteristics trigger two different processes: the health impairment and motivational process. In the health impairment process, job demands exhaust employees' mental and physical resources when they are trying to meet them, and may lead to depletion of energy and burnout, and eventually to health problems (Bakker et al. 2007; Demerouti et al. 2001). In the motivational process, job resources lead to increased levels of motivation in the form of work engagement (Schaufeli & Bakker, 2004) and in consequence, also to such outcomes as organizational commitment and excellent performance (Bakker & Demerouti, 2007). Althoug these two work conditions (demands and resources) have effects on employee health and motivation, they also have interactive effects on employee wellbeing. The first interaction is the one where job resources buffer the impact of job demands on strain. The

second interaction is the one where job demands amplify the impact of job resources on motivation/engagement (Bakker & Demorouti, 2014). Besides job resources, personal resources predict motivation, and mitigate the negative effects of job demands, in addition, work conditions and employee health and motivation affect each other over time.

A competency is a potential and describes what an individual can do (Boyatzis, 1982), however, demonstration of behaviour centraled to performance (Spencer and Spencer, 1993) corrolates with the proficiency level of an individual (Miller, 1990; Mehay, 2010) and deficiency or proficiency in a competency or its components influences performance (Rethans et al., 2002). Level of proficiency reflects the change in the perception and understanding of a demand situation, as the level of proficiency increases, demanding aspect of the situation and perception of stress decreases (Dreyfus & Dreyfus, 1980; Benner, 1982; Cates, 2014). Level of proficiency is an indicator of autonomy and competence at work (Lester, 2005). This means that gaining proficiency in a competency may fulfil basic psychological needs, like the needs for competence and autonomy, and play a motivational role at work (Ryan & Deci, 2000). As the level of proficiency increases, level of self-efficacy and situational awareness (Cates, 2014) or perception about the context increase, and due to this perception, individual may begin to see overall picture and how his/her actions fit with this picture (Lester, 2005), then, individual may develop proactive behaviours.

According to the literature, competencies may have several roles in JD-R model: First, proficiency level of an individual on a competency may affect the perception of job demands and job resources. Second, variation in the perception of job demands and job resources affects the health impairment and motivational processes defined in the JD-R model. Third, as an individual develops his/her proficiency level in a competency, he/she also develops self-efficacy, and, in turn, easily mobilizes job resources required to meet job demands. Fourth, as an individual develops his/her proficiency level, he/she begins to see work conditions (develop situational awareness) and how his/her actions fit with this conditions, then, may develop proactive behaviours, like job crafting. In addition, developing proficiency level in competencies may have role on career competencies. As an individual develops his/her proficiency level, he/she gains new resources and develops self-efficacy, and may tend to invest these resources in order to gain career competencies.

CHAPTER 5: STUDY 2 - ROLE OF LEADERSHIP COMPETENCIES ON WORK ENGAGEMENT AND CAREER COMPETENCIES

5. STUDY 2-ROLE OF LEADERSHIP COMPETENCIES ON WORK ENGAGEMENT AND CAREER COMPETENCIES

5.1. Introduction to study 2

Considering the state of the art presented before, in our first study, we identifed the competencies required to command a dispersed military team and developed a competency model. In this study, we aimed to examine role of leadership competencies, which are defined in the first study, on work engagement and career competencies of leaders.

5.2. Research question and hypotheses

Our research question is "How leadership competencies affect work engagement and career competencies of leaders?". We conducted our study in three steps: Since main predictors of work engagement are job characteristics, in order to see role of leadership competencies on work engagement in a broader picture, in the first step, we investigated role of job resources and job demands on work engagement in military context. In the second step, we investigated role of leadership competencies on JD-R model. In the third step, we examined whether leadership competencies are associated with career competencies.

In the first step, we investigated role of job resources and job demands on work engagement in military context. It is evident that job demands are negatively related to work engagement, have negative impact on work engagement and lead to decreased wellbeing, and job resources are important antecedents of work engagement, have positive relationship with engagement and lead to increased wellbeing (Akkerman et al., 2013b; Demerouti et al., 2001; Hakanen, Schaufeli & Ahola, 2008; Smith, 2012; De Beer et al., 2012). The first assumption of the JD-R theory states that the theory can be applied to all work environments and can be tailored to the specific occupation under consideration (Bakker & Demerouti, 2014), basing on this assumption, we argued that job demands are negatively and job resources are positively related with work engagement in military context.

We decided to particularly include role conflict and work overload as job demand factors, which were identified as typical stressors in prior military research (Johnson & Stinson, 1975; Jex & Bliese, 1999; Jex et al., 2001; Tremblay & Messervey, 2011; Sharma, 2015) and significant predictor of poor work engagement (Demerouti et al., 2001; Smith, 2012; Main, 2011).

According to literature, role clarity, possibilities for development and support are effective leadership behaviors within leader-focused organizations (Yukl, 2002) and also predictor of work engagement (De Beer et al., 2012; Halbesleben et al., 2010; Rothmann, 2007; Bakker, 2004; Hakanen, Bakker & Schaufeli, 2006). Since organizational leaders are prominent

within military organizations, and their behavior impact the perception of job resources (Alarcon et al., 2010) and buffer the stressors experienced by soldiers (Britt et al., 2004). We specifically focused on role clarity, possibilities for development and social support as job resource factors.

Basing on the literature above, we argued that in military context, perceived role conflict and work overload will have negative impact on perceived work engagement, and perceived role clarity, possibilities for development and social support will have positive impact on perceived work engagement. Then we formulated our first two hypotheses:

Hypothesis 1:

There is a positive relationship between perceived job resources (role clarity, possibilities for development and social support) and work engagement of officers.

Hypothesis 2:

There is a negative relationship between perceived job demands (work overload and role conflict) and work engagement of officers.

In the second step, we investigated role of leadership competencies on JD-R model. Initially, we examined whether leadership competencies are associated with job resources, job demands and work engagement.

According to the literature there are conceptual similarities between job resources and competencies. Job resources refer to physical, social, psychological or organizational aspects of the job that are: (a) functional in achieving work goals; (b) reduce job demands and the associated physiological and psychological costs; or (c) stimulate personal growth, learning, and development (Bakker, 2011; Bakker & Demerouti, 2007). Competencies are also functional in achieving work goals (Boyatzis, 1982; Burgoyne, 1993) and developed via training and development (Hsieh et al., 2012).

Job resources have both intrinsic and extrinsic motivational potential/role at work and thus, satisfy the basic psychological needs of autonomy, belonging and competence (Van den Broeck et al., 2008; Bakker & Demerouti, 2007). For instance, proper feedback fosters learning, thereby increasing job competence, whereas decision latitude and social support satisfy the need for autonomy and the need to belong, respectively (Bakker & Demerouti, 2007). Similar to job resources, mastering on a competency has intrinsic motivational potential/role at work through satisfying autonomy and competence at work. For example, a beginner level individual is able to achieve some steps using own judgment; however, supervision is needed for overall task (less autonomy) and appreciates complex situations; but only able to achieve partial resolution

(less competence); on the other hand, a proficient level individual is able to take full responsibility for own work (more autonomy) and deals with complex situations holistically (more competence) (Lester, 2005).

Job resources are generally the most important predictors of positive organizational outcomes such as work enjoyment, motivation, and engagement (Bakker et al., 2007; Bakker 2011). Similarly, competency usage has many benefits such as reduced staff turnover or increased employee productivity, hence performance (Kolibáčová, 2015).

According to JD-R theory, job resources buffer the impact of job demands on strain (Bakker & Demerouti, 2007; 2014; Seppälä, 2013). Similarly, in a recent study, professional competence was found to be buffering the increase of emotional exhaustion (Dicke, Parker, Holzberger, Kunina-Habenicht, Kunter & Leutner, 2015).

Previous research also showed that competency components (i.e. ability, self-efficacy) and competency related concepts (i.e. career competencies) are positively related to job resources and work engagement. For example, researchers reported that as the level of proficiency increases, level of self-efficacy increses (Cates, 2014) and self-efficacious employees experience higher levels engagement (Salanova et al., 2006; Llorens et al., 2007). Xanthopoulou et al. (2009a) found a reciprocal relationship between self-efficacy, and job resources and engagement. Vera, Salanova & Lorente (2012) stated that people with high efficacy beliefs feel that they have enough capacity and skills to meet any job demand and to recognize and know how to use the job resources that are also available. In addition, researchers showed that self-efficacy corrolates with career competencies, and career competencies have positive relationship with job resources and work engagement (Akkermans et al., 2013a; Akkermans et al., 2013b). Moreover, Airila et al. (2014) found that there is a positive relationship between work ability and job resources and work ability has positive effect on work engagement. In a recent study, role of some specific competencies on work engagement showed similar results. For example, researchers found that foundational competencies - knowledge, skills and abilities that people are expected to demonstrate to ensure effective performance in their respective work settings (Van Rooij, 2013) - have a significant positive effect on work engagement (Haruna et al., 2017; Ripin & Izzati, 2017).

Basing on the conceptual similarities and findings, we argued that if competency components and competency related variables, namely, work ability, self-efficacy, career competencies and foundational competencies have positive relationship with job resources and work engagement, we expect to find the same relationship between leadership competencies, and job resources and work engagement. For example, an individual who has higher level of

proficieny on some technical competencies may mobilize proper feedback (job resource) better than an individual who has lower level of proficieny or an individual who has higher level of proficieny on teamwork competency may mobilize social support (job resource) better than an individual who has lower level of proficieny, and mobilization of these resources, in turn, leads to high level of engagement through their motivational role. Basing on the arguments above, we formulated following two hypotheses:

Hypothesis 3:

There is a positive relationship between proficiency level of officers on leadership competencies and perceived job resource (role clarity, possibilities for development and social support).

Hypothesis 4:

There is a positive relationship between proficiency level of officers on leadership competencies and perceived work engagement.

A person's competencies describe what he or she can do, not necessarily what he or she does, nor does all the time regardless of the situation and setting (Boyatzis, 1982: P.12). Deficiency or proficiency on a competency influence demonstration of specific actions (Rethans et al., 2002). Proficiency level of an individual on a competency reflects the change in the perception and understanding of a demand situation (Dreyfus & Dreyfus, 1980; Miller, 1990; Mehay, 2010; Benner, 1982; Rethans et al., 2002; Lester, 2005). An individual who has lower level of proficieny (i.e. novice) have little conception of dealing with complexity and experience more stress, on the other hand an individual who has higher level of proficieny (i.e. proficient) develop self-efficacy and deal with complex situations holistically (Lester, 2005; Cates, 2014). That is, proficiency level of an individual on a competency may affect the perception of psychological working conditions characterized as job demands and job resources.

Self-efficacy is a competence-based personal resource (Bandura, 1997, Bandura et al., 1999) and describes individuals' beliefs in their capabilities to exercise control over challenging demands and over their own functioning (Bandura, 1997; Luszczynska et al., 2005). Researchers identified that inadequate skills and low level of proficiency are related to decreased self-efficacy and increased stress (Tynjälä and Heikkinen, 2011; Cates, 2014). Moreover, a recent research showed that employees with more professional self-efficacy perceive more challenge demands and fewer hindrance demands, and this will in turn relate to more engagement and less burnout (Ventura et al., 2015).

Basing on the literature above we argued that proficiency level of an individual on a competency may affect the perception of job demands, for example, an individual who has lower level of proficieny (i.e. novice) may feel less self-efficious and perceive work overload as hinderance job demand, on the other hand an individual who has higher level of proficieny (i.e. proficient) may feel more self-efficious and perceive work overload as challenge demand. Basing on the arguments above we formulated following hypothesis:

Hypothesis 5:
There is a negative relationship between proficiency level of officers on leadership competencies and perceived job demands (work overload and role conflict).

Then, we investigated the process through which leadership competencies would be related to work engagement.

According to the literature, professional competence has positive association with self-efficacy (Cates, 2014; Lauermann & König, 2016), employees who have high levels of self-efficacy are well able to mobilize their job resources (Xanthopoulou et. al, 2009a, 2009b) and mobilization of job resources results with motivation in the form of work engagement (Bakker, 2014; Bakker & Demerouti, 2017). Several research showed that competencies and its components (i.e. work ability and self-efficacy, career competencies) are positively related to job resources and job resources lead to increased levels of motivation (Schaufeli and Bakker, 2004; Hakanen et al. 2006; Lorente Prieto et al, 2008; Rothmann & Rothmann, 2010; Bakker & Demerouti, 2017). Basing on the literature above we assumed that high proficiency level increases the perception of job resources, which in turn leads to heightened work engagement. For example, an expert level individual on decision making competency may experience more decision making autonomy (job resource), experiencing autonomy result with motivation and motivation leads to work engagement. Or an expert level individual on teamwork competency may experience more colleague support (job resource), colleague social support satisfies the need for belonging and result with motivation, which, in turn, leads to work engagement. Basing on the arguments above we formulated following hypothesis:

Hypothesis 6:
Job resources mediates the relationship between leadership competencies and work engagement.

The proposed study model which encompasses hypotheses 1 to 6 is presented in Figure 5.1.
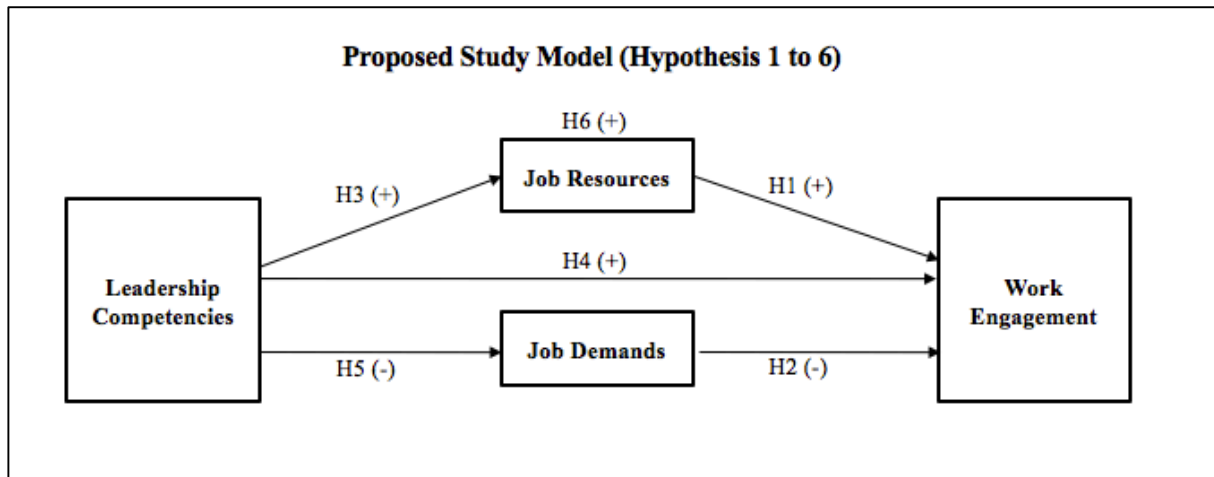
Figure 5.1.: Proposed study model (Hypotheses 1 to 6)

In the third step, we examined whether leadership competencies are associated with career competencies.

Competencies are central to performance and career competencies central to career development (Spencer & Spencer, 1993; Akkermans et al., 2013a). Research showed that career competencies are casually related to performance and self-efficacy (Akkermans et al., 2013a). According to SCC theory career interests are regulated by self-efficacy and an outcome expectation, which means people, will form lasting interests in activities when they experience personal competency and positive outcomes (Lent et al., 1994). Moreover, COR theory defines mastery of skills as a resource (Hobfoll & Lilly, 1993) and states that resources tend to generate other resources and as individuals gain resources, they are in a better position to invest and gain additional resources (Hobfoll, 1989; 2002; Hobfoll & Lilly, 1993).

In the view SCC and COR theory, we may argue that employees may acquire new skills, knowledge and abilities and develop their competencies, as they develop their competencies or in the view COR theory gain new resources, they develop self-efficacy and tend to invest their resources in order to gain additional resources. For example, an employee may gain new managerial competencies or develop his/her proficiency level on managerial competencies; then, improved knowledge and skills lead to self-efficacy. A self- efficacious employee may formulate action plans with goals for personal development and actively explore for career-related opportunities on the labor market or actively influence learning processes and work processes related to his personal career. Basing on the arguments above we developed following hypothesis:

Hypothesis 7: Leadership competencies are positively related career competencies.

5.3. Method

5.3.1. Participants and procedure of the study

Our study was performed among officers, who are in the training period for career development in an Armed Forces War Collage. Participants were briefed about the focus and context of the study. Thus, participation was voluntary and participants were told that the forms would be kept by the researcher confidentially. After obtaining informed consent, participants received a paper-and-pencil questionnaire. All of officers, who received a questionnaire, completed it, resulting in a 100 % response rate.

Totally, 88 officers participated the questionnaire, % 45 of the participants from Land Forces Command and % 55 of the participants from Gendarmerie General Command. Most of the participants were male (97.7%) and between the age of 30-35 (63%). Majority of the participants had master's degree (%88.6). The demographic composition of the participants is presented in Table 5.1. below.

Table 5.1.: Demographic composition of the participants

Gender	Female: 2 Male: 86
Age groups	25-30 years: 1 31-35 years: 56 36-40 years: 23 41-45 years: 8
Educational status	Degree: 9 Master's degree: 78 Doctoral degree:1
Service	Land Forces (Army): 40 Gendarmerie General Command:48
Ranks*	Lieutenant Colonel:1 Major: 25 Captain: 62
Career	Staff Officer: 45 Command and Staff Officer: 43

* Ranks of officers are ordered from junior to senior as lieutenant, first lieutenant, captain, major, lieutenant colonel and colonel.

5.3.2. Measurement instruments

Three types of job resources, two types of job demands, work engagement, leadership competencies and career competencies were measured in this study via 5 points Likert scales that provided acceptable psychometric properties when applied in different countries

(Schaufeli, Bakker & Salanova, 2006; Altunel, Kocak & Cankir, 2015; Taştan, 2014; Akkermans et al., 2013a; Akkermans & Tims, 2017). The survey is presented in the Appendix-5.

In the job resources section of the survey, possibilities for development, social support and role clarity were selected to measure job resources. Possibilities for development perceptions of the participants was measured with 7 items via Copenhagen Psychosocial Questionnaire (CPQ)'s Possibilities For Development Scale. The examples of this 7- item scale are "Do you have the possibility of learning new things through your work?" and "Does your work demand a high level of skill or expertise?". First four items were rated on a five-point scale ranging from 1 (To a very large extent) to 5 (To a very small extent) and last three items were rated on a five-point scale ranging from 1 (Never) to 5 (Always). Social support perceptions of the participants was measured with 4 items via CPQ's Social Support Scale. The examples of this 4-item scale are "How often do you get help and support from your colleagues?" and "How often do you get help and support from your immediate superior?" The items were rated on a five-point scale ranging from 1 (Never) to 5 (Always). Role clarity perceptions of the participants was measured with 4 items via CPQ's Role Clarity Scale. The examples of this 4-item scale are "Do you know exactly how much say you have at work?" and "Do you know exactly what is expected of you at work?" The items were rated on a five-point scale ranging from 1 (To a very small extent) to 5 (To a very large extent).

In the job demands section of the survey, work over load and role conflict were selected to measure job demands. Work overload perceptions of the participants was measured with 4 items via Moore's (2000) Perceived Work Overload Scale. The examples of this 4-item scale are "I feel that the amount of work I do interferes with how well it is done." and "I feel busy or rushed." The items were rated on a five-point scale ranging from 1 (Never) to 5 (Always). Role Conflict perceptions of the participants was measured with 4 items via CPQ's Scale. The examples of this 4-item scale are "Do you do things at work, which are accepted by some people, but not by others?" and "Are contradictory demands placed on you at work?" The items were rated on a five-point scale ranging from 1 (To a very small extent) to 5 (To a very large extent).

Work engagement was measured via shortened version of the Utrecht Work Engagement Scale (UWES-9). Schaufeli et al. (2006) developed and validated UWES-9 with the data collected in 10 different countries (Australia, Belgium, Canada, Finland, France, Germany, Netherlands, Norway, South Africa, Spain; N = 14,521) and recommended that the shortened version should be used if work engagement construct is handled as one overall factor. Then,

instrument was used in several countries for example Portugal (Moura & Orgambídez-Ramos, 2014) and Turkey (Altunel et al., 2015). In this study, work engagement is added to the model as one overall factor and measured with UWES-9. A sample item for UWES-9 is "At my work, I feel I am bursting with energy." The items were rated on a five-point scale ranging from 1 (Never) to 5 (Always).

Career competencies were measured with 21-item Career Competencies Questionnaire (CCQ; Akkermans et al., 2013a) and handeled as one factor with the six scale means as indicators of the latent factor career competencies (Akkermans & Tims, 2017). The items were measured on a 5-point Likert scale ranging from 1 (completely disagree) to 5 (completely agree). The CCQ items reflect six underlying career competencies: reflection on motivation was measured with 3 items (e.g., "I know what I like in my work", reflection on qualities was measured with 4 items (e.g., "I know my strengths in my work", networking was measured with 4 items (e.g., "I know how to ask for advice from members of my network", self-profiling was measured with 3 items (e.g., "I am able to show others what I want to achieve in my career"), work exploration was measured with 3 items (e.g., "I can actively search for the developments in my area of work"), and career control was measured with 4 items (e.g., "I can make clear career plans").

Leadership competencies were measured basing on our first study. In the first study, we identified competencies required to command a dispersed military team and developed a competency model. The proposed model is presented in Table 5.2. Ten of these competencies were selected in order to measure the proficiency level of leadership competencies.

Table 5.2. Dispersed Military Team Competency Model

Leadership competencies	Core competencies		Membership competencies
- Motivating and influencing	- Communication	- Building trust	- Self Awareness and Understanding
- Planning and organizing	- Teamwork	- Responsibility	- Self-confidence
- Crisis management	- Adaptability	- Initiative	- Self-control
- Managing organizational groups	- Achievement motivation	- Problem solving	- Engaging in self development
- Ensuring shared understanding	- Knowledge of doctrine and legal regulations	- Decision making	- Appropriate use of technology

Proficiency level of participants on selected leadership competencies was measured with a proficiency-based scale adapted from Wolters et al. (2014). The examples of this 10- item

scale are "I can identify what needs to be done and take neccessary actions before being asked (Initiative)." and "I can use effective approaches for choosing a course of action or developing appropriate solutions (Decision making).". The items were measured on a 5-point Likert scale ranging from 1 (No proficiency) to 5 (Expert level). Perceived proficiency level of participants on selected leadership competencies is presented in Figure 5.2.
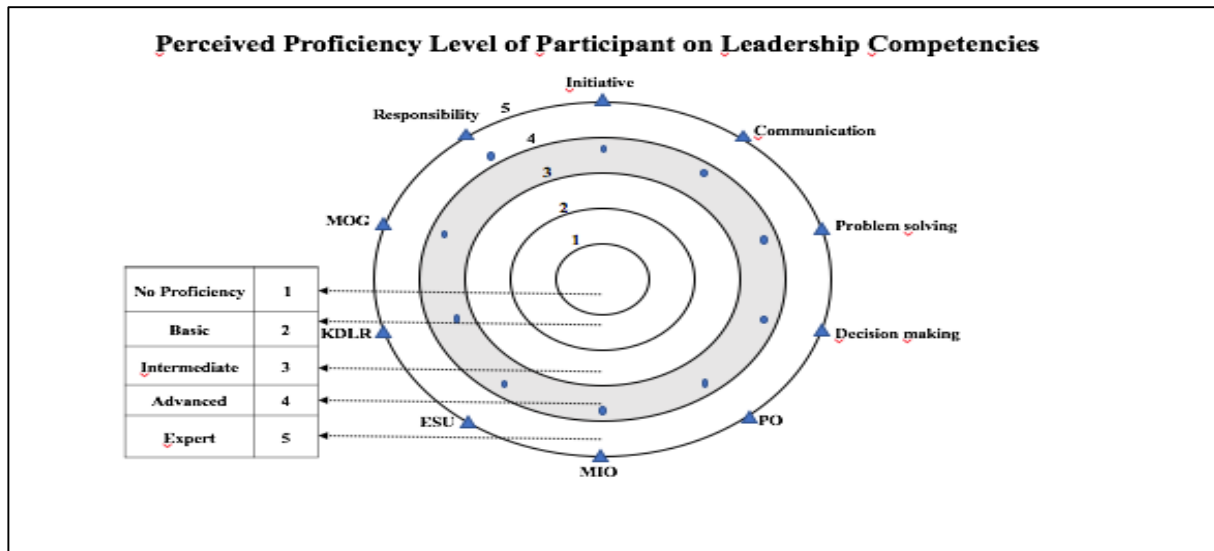
Figure 5.2. Perceived proficiency level of participant on leadership competencies

5.3.3. Internal consistency of the measuring instruments

Cronbach alpha coefficients (α) were used to evaluate the internal consistency of the measuring instruments (Gregory, 2004). Table 5.3. shows that all scales had an alpha coefficient higher than .70 (Nunnaly & Bernstein, 1994). There were only some exceptions of possibilities for development (α= .69).

Table 5.3. Cronchbach's alpha of the scales

	Scale	Number of items	Cronchbach's alpha
Job Resources	Role Clarity	4	.82
	Possibilities For Development	7	.69
	Social Support	4	.71
Job Demands	Role Conflict	4	.83
	Work Over Load	4	.75
Work Engagement		9	.89
Leadership Competencies		10	.92
Career Competencies		21	.93

5.3.4. Demographic data and other issues

A data sheet was developed to collect demographic information about the participants. Information collected included gender, age, education status, service, rank and career of the participants. The items of the scales were all translated from English to Turkish by the researcher. After the translation and completion of the instruments for each of the variables in the study, the draft questionnaire was distributed to a committee of three officers to assess the Turkish wording and statements. These officers independently evaluated all the items. After the inter-judge reliability controlling process, the reports were reviewed by the researcher in order to assure the content understanding.

5.3.5. Strategy of analysis

The data was analysed by using Statistical Package for the Social Sciences (SPSS) Programme (Version 22). Descriptive statistics were used to analyse the data consisting of means, medians and standard deviations. For each of the scales, Exploratory Factor Analysis was conducted to see if similar factors are obtained and to eliminate the items with low loadings. Kaiser Meyer Olkin measure of sampling adequacy scores and the significance of Bartlett test were considered for the adequacy of the factor analysis. Moreover, Cronbach alpha coefficients (α) were used to evaluate the internal consistency of the measuring instruments. The Pearson product momentum correlation coefficients were used to specify the relationship between the variables in the study and the effect size is determined according to Cohen's (1988) treshholds. The level of statistical significance was set up as $p \leq 0,05$. Tabachnick and Fidell's suggestions were followed for the sample size adequacy in order to perform analysis (1996, p. 132). Regression analysis was conducted to determine whether the predictor variables held predictive value for criterion variables. Baron and Kenny's (1986) recommendations were followed for mediation analysis and the significance of the mediation model was determined by performing a Sobel test (Goodman, 1960).

5.4. Results

5.4.1. Descriptive statistics

The means and standard deviation of all key variables are presented in Table 5.4. The scores show that variables are distributed normally. As shown in the table, work overload has the greatest (3.79) and the role conflict (3.01) has the lowest mean. Means of all variables were greater than 3 which is the mid-point of the absolute scales using 5-point Likert format.

Table 5.4. Means and standard deviations of the study variables.

	Variables	N	Min.	Max.	Mean	Standard Deviation
Job Resources	Role Clarity	88	2.00	5.00	3.73	.62
	Possibilities For Development	88	2.40	4.71	3.59	.57
	Social Support	88	1.50	5.00	3.19	.63
Job Demands	Role Conflict	88	1.50	5.00	3.01	.80
	Work Over Load	88	2.25	5.00	3.79	.62
Work Engagement		88	2.11	5.00	3.55	.58
Leadership Competencies		88	1.00	5.00	3.75	.67
Career Competencies		88	1.00	4.78	3.56	.57
Valid N (listwise)		88				

5.4.2. Factor analysis

Factor analysis was performed for all scales used in this study. Principal Components analysis was executed. Varimax Rotation was used. Initially, the items which have factor loadings less than .50 (Possibilities for development-5,7; Career competencies-17) were excluded. Then, factor loadings for all the study variables ranged between .50 and .86. The sampling adequacy is tested by Kaiser- Meyer Olkin (KMO) coefficient. KMO Scores, except social support (KMO=.59), exceed the expected value (.60); and Bartlett's test of Sphericity were significant. Factor analysis result of Work Engagment Scale (UWES-9) is presented in Table 5.5. and the result of the other scales are presented in the Appendix-6.

Table 5.5. Factor Analysis Results and Reliability of Work Engagement Scale

Item Nu.	Scale	Factor Loading	Cronchbach's alpha	Explained Variance
	Work Engagement		.89	55.57
1	At my work, I feel bursting with energy.	.82		
2	At my job, I feel strong and vigorous.	.81		
3	I am enthusiastic about my job.	.84		
4	My job inspires me.	.83		
5	When I get up in the morning, I feel like going to work.	.75		
6	I feel happy when I am working intensely.	.61		
7	I am proud of the work that I do.	.60		
8	I am immersed in my work.	.64		
9	I get carried away when I am working.	.77		

KMO=.82; Chi-Square Bartlett's Test=525.73; P=.000

5.4.3. Pearson-moment correlation

The relationship between variables was determined by performing the Pearson-moment correlation. Intercorrelations of the study variables are presented in Table 5.6.

Table 5.6. Intercorrelations of the variables.

S/N	Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10
1	Job Resources	3.46	.49	1									
2	Role Clarity	3.73	.62	.75**	1								
3	Possibilities For Dev.	3.47	.74	.84**	.52**	1							
4	Social Support	3.19	.63	.64**	.18	.29**	1						
5	Job Demands	3.40	.59	-.01	-.08	.05	.00	1					
6	Role Conflict	3.00	.80	-.11	-.14	-.05	-.07	.88**	1				
7	Work Overload	3.79	.62	.13	.03	.16	.09	.79**	.39**	1			
8	Work Engagement	3.55	.58	.44**	.44**	.31**	.24*	-.11	-.04	-.16	1		
9	Leadership Competency	3.75	.67	.13	.27*	.14	-.12	-.09	-.03	-.13	.23*	1	
10	Career Competency	3.56	.57	.14	.17	.18	-.05	-.10	-.10	-.07	.14	.69**	1

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

5.4.4. Role of job demand and job resources on work engagement in military context

Inspection of Pearson-moment correlation scores (Table 5.6.) showed that job resources measured as role clarity, possibilities for development and social support displayed a statistically significant positive relationship with work engagement (p<.01;p<.01 p<.05). Thus, Hypothesis-1, which states that there is a positive relationship between perceived job resources and work engagement of officers was supported.

Inspection of variables which measure job demands showed that role conflict and work overload displayed a statistically negative relationship with work engagement. Thus, Hypothesis-2, which states that there is a negative relationship between perceived job demands and work engagement of officers was not supported. The direction of the relationship was as expected; however, the effect was not significant. This may result because of the sample size. We expected that our hypohthesis would be supported, if we increased the sample size.

A multiple regression analysis was used to define the predictors of work engagement (Table 5.7.). A significant regression equation was found (F (3, 84) = 7.90, p < .001), with a R^2 of .22. Participants' predicted work engagement is equal to 1.59 + .37 (Role Clarity). Results showed that role clarity measured as job resource is significant predictor of work engagement in this model and the model predicts 22 % of the variance in work engagement.

Table 5.7. Regression analyses of job resources (Role clarity, possibilities for development and social support) as predictor variables on work engagement as criterion variable.

Criterion variable: Work Engagement		
Predictor variables	β	p
Role Clarity	.37	.001*
Possibilities for Development	.08	.519
Social Support	.15	.139
R²	.22***	

*p < 0.05; ***p < 0.001 – statistically significant

5.4.5. Relationship between leadership competencies and job resources, job demands and work engagement

According to correlation scores (Table 5.6.), leadership competencies displayed a statistically significant positive relationship with role clarity (p< 0.05), positive relationship with possibilities for development and negative relationship with social support; statistically negative relationship with role conflict and work overload; statistically significant positive relationship with work engagement (p< 0.05).

These scores showed that Hypothesis-3, which states that there is a positive relationship between proficiency level of officers on leadership competencies and job resource, was partially supported; Hypothesis-4, which states that there is a positive relationship between proficiency level of officers on leadership competencies and work engagement of officers, was supported, and Hypothesis-5, which states that there is a negative relationship between proficiency level of officers on leadership competencies and job demands (work overload and role conflict), was not supported.

5.4.6. Role of leadership competencies in the motivational process of JD-R Model

In order to explore the role of leadership competencies in the motivational process of JD-R model, we compared two structural models. First, a direct effect only model: a structural

model in which job resources and competencies only had direct effects on work engagement (Figure 5.3.).
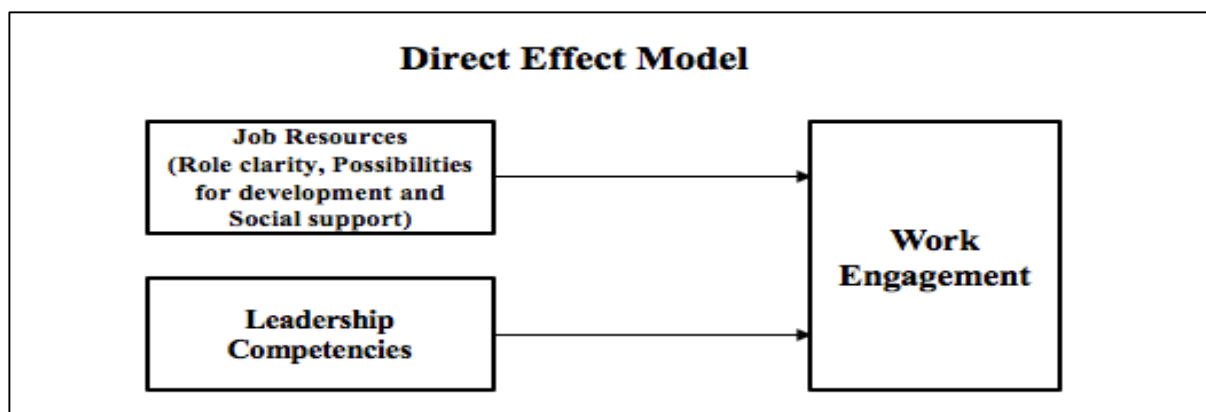
Figure 5.3.: Direct effect model (Job resource and leadership competencies have direct effect on work engagement.)

A multiple regression analysis was performed in order to see how job resources (Social support, possibilities for development and role clarity) and leadership competencies effect and explain work engagement (Table 5.8.). A significant regression equation was found (F (4, 83) = 6.54, p < .001), with a R^2 of .24. Participants' predicted work engagement is equal to 1.18 + .33 (Role clarity). Results showed that role clarity is the significant predictor of work engagement in this model and the model predicts 24 % of the variance in work engagement.

Table 5.8. Regression analysis of leadership competencies and job resources (role clarity, Possibilities for development and social support) as predictor variables on work engagement as criterion variable.

Criterion variable: Work Engagement		
Predictor variables	β	p
Leadership competencies	.15	.146
Role Clarity	.33	.005*
Possibilities for Development	.07	.559
Social Support	.18	.084
R²	.24***	

*p < 0.05; ***p < 0.001 – statistically significant

Second a mediation model: As stated above, results of the first model (Figure 5.3.) showed that job resources and competencies had motivational role on JD-R model, and role clarity was the predictor of work engagement. Then, we investigated the role of job resources between relationship competencies and work engagement. Considering the intercorrelation scores (Table 5.6.), which showed that competencies only had significant relationships with role

clarity and work engagement (r = 0.27, p < 0.05; r = 0.23, p < 0.05, respectively), we tested a model in which leadership competencies had an effect on work engagement via role clarity. The model is presented in the Figure 5.4.
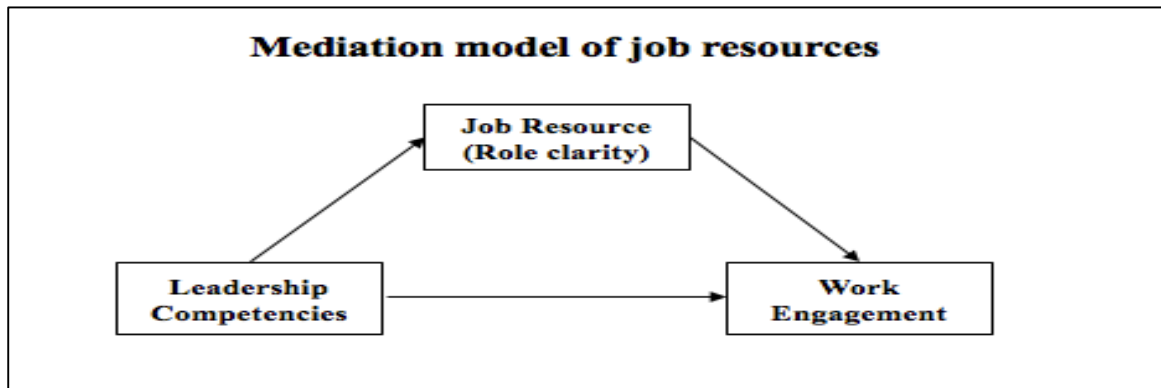
Figure 5.4.: Mediation model of job resource (Hypothesis-6: Job resources mediate the relationship between leadership competencies and work engagement.)

In order to see how role clarity, effect and explain the relationship between leadership competencies and work engagement, a multiple regression/mediation analysis was performed. Table 5.9. covers 3 of the 4 steps suggested by Baron and Kenny's (1986) procedure.

Table 5.9. Summary of mediation analysis on role clarity between relationships of leadership competencies and work engagement

Variables Criterion:	Role clarity	Work engagement
Predictors:	β	β
Step 1		
Leadership competencies	.270 *	
R² adjusted	.062	
F	6.76*	
Step 2		
Leadership competencies		.225 *
R² adjusted		.039
F		4.76*
Step 3		
Leadership competencies		.116
Role clarity		.404 *
R² adjusted		.183
F		10.74***

Note: *p<. 05; ***p<. 001

Step 1 of the analysis showed that leadership competencies had a positive and significant effect on role clarity (β = 0.27, p < 0.05), Step 2 of the analysis showed that leadership competencies had a positive and significant effect on work engagement (β = 0.225, p < 0.05), Step 3 of the analysis showed that when we entered the role clarity (mediator) in to the model,

role clarity was also positive and significantly related to work engagement ($\beta = 0.404$, $p < 0.05$), however, effect of leadership competencies on work engagement ($\beta = 0.116$, $p > 0.05$) was not significant anymore, confirming mediator role of role clarity between the relationship leadership competencies and work engagement. A Sobel test was performed in order to see whether the beta of the meditational model is significant (Goodman, 1960). The test revealed that this beta is significant ($z = 2.17$, $p = .0029$). Results of Sobel Test are presented is in the Appendix-7.

5.4.7. Relationship between leadership competencies and career competencies

As stated above, the second purpose of our study was to investigate whether leadership competencies were associated with career competencies. The correlations scores (Table 5.6.) showed that the leadership competencies displayed a statistically significant positive relationship career competencies ($r=0.69$, $p<0.01$). Considering the correlations scores, we concluded that our hypothesis which states that leadership competencies are positively associated with career competencies was supported.

Then, we performed a regression analysis to define whether leadership competencies predict career competencies (Table 5.10.). A significant regression equation was found ($F (1, 86) = 79.53$, $p < .000$), with the R^2 of .48. Participants' predicted career competencies were equal to $1.34 + .69$ (Leadership competencies).

Table 5.10. Regression analysis of leadership competencies as predictor variables on career competencies as criterion variable.

Criterion variable: Career competencie		
Predictor variables	β	p
Leadership competencies	.69	.000
R^2	.48***	

*$p < 0.05$; ***$p < 0.000$ – statistically significant

Results showed that leadership competencies were the significant predictor of career competencies in our model, and the model predicted 48% of the variance in career competencies.

5.5. Discussion and conclusion

In our first study, we developed a competency model required to command a dispersed military team, and proposed that mastering on these competencies facilitates DMTs' performance. In this study, we aimed to examine the role of proposed leadership competencies on work engagement and career competencies of leaders. Specifically, we tested (1) the effects of job resources (role clarity, possibilities for development and social support) and job demands (role conflict and work over load) on work engagement in military context; (2) weather leadership competencies could play a role in the motivational process assumed by the JD-R model; and (3) weather leadership competencies could have an effect on career competencies of leaders.

Firstly, the findings of our study showed that assumptions of the JD-R model were valid in military context, secondly, we found that leadership competencies had direct effect on work engagement, and role clarity mediated the relationship between leadership competencies and work engagement, and, thirdly, leadership competencies had a direct effect on career competencies. Our findings underline the value of investigating role of related factors in JD-R model and research on drivers of career competencies.

5.5.1. Effects of job charactersitics on work engagement in military context

Regarding the assumptions of the JD-R model in military context, the results showed that job resources measured as role clarity, possibilities for development and social support displayed a statistically significant positive relationship with work engagement; job demands measured as role conflict and work overload displayed a statistically negative relationship with work engagement. Indicating that JD-R model can be applied to all work environments and can be tailored to the specific occupation under consideration (Bakker & Demerouti, 2014).

Our findings are consistent with previous studies that states that job resources, more specifically, role clarity (Lorente Prieto et al., 2008; De Beer et al., 2012; Taştan, 2014; Choo, 2017), social support (Schaufeli & Bakker, 2004; Hakanen et al., 2006) and possibilities for development (De Beer et al., 2012; Halbesleben et al., 2010; Rothmann & Rothmann, 2010) have positive relationship with engagement.

Regression analyses showed that 22 % of the variance in work engagement was explained by job resources, with role clarity, possibilities for development and social support in our model, and role clarity was the significant predictor of work engagement. This result was in

line with the findings of prior studies which states that role clarity predicts work engagement (Rothmann & Rothmann, 2010; Choo, 2017).

According to the literature, employees with more role clarity are likely to be more competent at work (Mukherjee & Malhotra, 2006; Donald et al., 2010), because they understand what they need to know to do as well as how the task should be done (e.g., Baron & Armstrong, 1998; Avinandan & Neeru, 2006). Indicating that role clarity satisfies the basic need of competence. In that sense, how role clarity results with work engagement can be exlained in the frame work of self-determination theory. According theory, the key to autonomous regulation is satisfaction of basic psychological needs for competence, autonomy and relatedness (Ryan & Deci, 2000). To the extent that these needs are ongoingly satisfied, people will develop and function effectively and experience wellness, but to the extent that they are thwarted, people will more likely evidence ill-being and non-optimal functioning (Deci, Olafsen & Ryan, 2017). Moreover, research showed that satisfaction of one need go hand in hand with the satisfaction of the other two needs, and satisfaction of the three needs lead to well-being (Van den Broeck et al., 2008). It is likely that in the context of our study, perception of role clarity resulted with motivation in the form of work engagement through the satisfaction of basic need for competence.

5.5.2. Relationship among leadership competencies, job resources, job demands and work engagement

In the context of our study, leadership competencies were negatively associated with job demands measured as role conflict and work overload. Although correlation scores were not significant, the direction of the relationship was as hypothesized, indicating that increasing the sample size may result with scores that would confim our hypothesis.

Regarding the relationship between leadership competencies and job resources, we found that leadership competencies displayed a statistically significant positive relationship with role clarity. The relationship between leadership competencies and job resources lies in the conceptual similarities between them. First of all, both, competencies and job resources, are functional in achieving work goals (Bakker, 2011; Bakker & Demerouti, 2007; Boyatzis, 1982; Burgoyne, 1993). Second, both have motivational role at work through satisfying basic psychological needs (i.e. autonomy, belonging and competence; Lester, 2005, Van den Broeck et al., 2008). For example, proper feedback fosters learning, thereby increasing job competence, whereas decision latitude and social support satisfy the need for autonomy and the need for belonging, respectively (Bakker & Demerouti, 2007), and in a similar way, mastering

on a competency results with job competence and leads to autonomy at work (Lester, 2005) and, naturally, satisifes the basic need for competence and autonomy. However, noteworthily, we found that leadership competencies displayed a statistically negative relationship with social support. Although this negative relationship was not statistically significant, the direction of the relationship showed evidence that the perception of job resources may be affected by the individual differences and the social context.

According to the literature, social support provides assistance, support, and help for a person (Lambert et al., 2010), however as the proficiency level of an individual increases, the need for social support, especially the need for supervisor support decreases (Lester, 2005). Because, proficiency level of an individual is an indicator of required supervision for the individual at work, and low level proficiency requires more supervision, on the other hand high level proficiency requires less supervision. For example, a beginner level individual needs supervision for overall work, but a competent level individual achieve most tasks using his/her own judgement, moreover a proficient and/or expert level individual has a potential to provide supervision (Dreyfus & Dreyfus, 1980; Lester, 2005).

Why leadership competencies have a negative relationship with social support can also be explained in the frame work of self-determination theory. Job resources play an intrinsic and extrinsic motivational role through satisfying basic psychological need of autonomy, belonging and competence (Bakker & Demerouti, 2007; 2014). According to SDT, intrinsic motivation is posited to be a natural psychological process (Deci, 1975). It is a manifestation of the proactivity inherent in the nature of human life. When people are not blocked or discouraged from doing so, they engage their physical and social environments, doing what interests them and attempting to master aspects of their world (Deci & Moller, 2005). Extrinsic motivation is a construct that pertains whenever an activity is done in order to attain some separable outcomes. For example, a student who does his homework only because he fears parental sanctions for not doing it is extrinsically motivated because he is doing the work in order to attain the separable outcome of avoiding sanctions. Similarly, a student who does the work because she personally believes it is valuable for her chosen career is also extrinsically motivated because she too is doing it for its instrumental value rather than because she finds it interesting (Ryan & Deci, 2000).

The relationship between extrinsic and intrinsic motivation is negatively interactive, because, when individuals extrinsically motivated, they feel to be controlled and thus not self-determined (Deci & Moller, 2005). In another words, people have an innate need to be self-determining, to feel like the initiators of their own activities, then the addition of the external

factors might leave them feeling controlled by the factors, thus thwarting their experience of autonomy or self-determination and resulting in the diminishment of the natural process of intrinsic motivation (Deci & Moller, 2005). Researchers stated that the social context may block the development of basic needs, namely competence, autonomy, and relatedness by providing inconsistency or chaos, coercion, or neglect, respectively (Skinner & Wellborn, 1994) and to the extent that the social context supports these needs in an individual, that individual will be engaged within a particular context (i.e. family, school, or work) (Miserandino, 1996). Our study was conducted with the participation of advanced level individuals. According to Lester (2005), advanced level of proficiency does not require supervision. For this reason, it is likely that in the context of our study, perception of supervisor support was experienced as an external intervention which thwarts the experience of autonomy and resulted with demotivation.

In addition, we found that leadership competencies displayed significant positive relationship with work engagement. Extant literature states that mastering on competencies increase self-efficacy (Pas, Bradshaw & Hershfeldt, 2012; Self-efficacy theory, 2013; Cates, 2014), perceived self-efficacy facilitates mobilization of job resources (Bandura, 1997; Vera et al., 2012), and mobilization of job resources result with work engagement (Schaufeli et al., 2004; Hakanen et al., 2008; Bakker, 2011). Several researchers reported similar results regarding the relationship between competency related variables and work engagement. For example, previously, Xanthopoulou et al. (2009a, 2009b) found a reciprocal relationship between self-efficacy and work engagement. Then, Akkermans et al. (2013a, 2013b) showed that career competencies has significant positive relationship with self efficacy and work engagement. In the study of Airila et al. (2014), work engagement displayed a significant positive relationship with work ability. Recently, Haruna et al. (2017), and Ripin and Izzati (2017) reported that foundational competencies have a significant positive effect on work engagement.

5.5.3. Role of job resources on the relationship between leadership competencies and work engagement

In this study, we measured three types of job resources, namely, role clarity, possibilities for development and social support; however, we observed that only role clarity mediated the relationship between competencies and work engagement. Indicating that since they have more practical knowledge and situational awareness, competent employees understand their roles more clearly (Cates, 2014), and experiencing role clarity results with motivation and work engagement (Rothmann & Joubert, 2007).

This result aligns with earlier findings regarding the motivational function of role clarity, which showed that role clarity mediated the relationship between job resources (i.e. feedback, participation and team support) and positive organizational outcomes (i.e. job satisfaction and organizational commitment; Mukherjee & Malhotra, 2006); perception of role clarity positively associates with engagement (De Beer et al., 2012) and perception of mastery (Boström, Hörnsten, Lundman, Stenlund & Isaksson, 2013). This is an important result, because military jobs are one of the most stressful jobs, and this study demonstrated that military personal can derive motivation, and well-being through role clarification. Moreover, it was also observed that leadership competencies contribute for a more clear role perception and for higher work engagement.

5.5.4. Relationship between competencies and career competencies

Our results demonstrated that leadership competencies displayed significant positive relationship with career competencies, leadership competencies predicted leadership competencies, and our model explained 48% of the variance in career competencies. Indicating that development of competencies in one domain shows significant correlation with the development of competencies in another domain (Sternberg, 2005), and mastering on leadership competencies fosters development of career competencies.

This finding is in line with the literature, which suggests that mastering on competencies fosters proactive behaviors (Cates, 2014), proactive personality is linked to career success (Seibert, Crant & Kraimer, 1999), and proactive individuals engage career management (Crant, 2000).

This finding also supported the principles of SCC theory, which states that people may form lasting interests in career focused activities when they experience personal competence and positive outcomes (Lent et al., 1994). In addition, our finding also supported the principles of COR theory (Hobfoll, 2002), which states that so-called resource caravans may develop in which resources can create additional resources. That is, as an individual gain and develop leadership competencies or in the view COR theory new resources, he/she tends to invest these resources in order to gain additional resources such as career competencies.

5.5.5. Theoretical implications

Our study is one of the limited number of studies conducted in the military context which tested the principles of JD-R theory (Bakker & Demerouti, 2014). In addition, our study was

the first to integrate perceived professional authenticity in specific competencies in the JD-R model. With our findings, we showed that mastering on competencies affects the perception of work conditions and work engagement, high level of competence results with high level of work engagement through perception of role clarity, and depending on the individual differences, some job resources (i.e., social support) may turn in to a stressor.

Another important theoretical aspect of this study is related role of leadership competencies on career competencies. Our results demonstrated that leadership competencies displayed a significant positive relationship with career competencies. Suggesting that mastering on job specific competencies leads to development of career specific competencies.

5.5.6. Limitations of the study

Our study has some limitations. First, we conducted our study with limited number of participants that was not enough to quantitatively represent the organization that we were studying. Second, our participants were officers who have the proficiency level (advanced). However, in this organization there are officers different statues (officers, noncomissioned officers, civilian officials, enlisted men, ect.) and different proficiency levels in this statues in military organizations, in that sense, we are unable to generalize from the current results. Third, as we studied a limited set of job demands and resources we cannot conclude about the possible influence or relevance of other job demands and resources. Moreover, the generalizability of the current findings to other, omnipresent or organization-specific (army, navy, air force) job characteristics need to be demonstrated. Fourth, we used JD-R model as theoretical framework and examined the role of competencies on perception of work conditions and work engagement, whereas we did not include job crafting in our examination. The inclusion of job crafting into the study would be relevant and the results could have been more fruitful to see the role of competencies on the entire JD-R model. For example, it could be interesting to study job crafting in the scope of leadership, JD-R model and competencies. Fifth, as all data were gathered through self-reports, in one single point in time, common method variance might contaminate the results. Finally, due to the limited sample size, some sophisticated statistical tools were not used.

5.5.7. Practical implications

Our results suggest that perceived job resources lead to increased work engagement. This means that in order to create a healthier and more motivated personal, military organizations

should focus on positively valued aspects of the workplace and design more resourceful organizational environment.

Our results also suggested that perceived competence was positively related to work engagement and career competencies. This means that besides aspects of the workplace, aspect of the person is related to work engagement, and to create a positive effect on well-being and motivation, military organizations should focus on training more competent personel. This will foster mobilization of job resources, keep personal engaged, and, in turn, result with engagement and performance. Further, developing competence will foster career competencies which is also found to be important for motivational processes as well as career development and relevant concept in stimulating well-being in the workplace. It is important to underline that while desiging organizational environment, in order not to creat unexpected stress resources, military organizations should focus on proficiency level of the personal.

5.5.8. Conclusion

The purpose of modern competency-based human resources management is to reach maximum performance, and research showed that work engagement (Bakker, 2011) and career competencies are correlates of performance (Akkermans et al, 2013a). In this study, we investigated the role of leadership competencies on work engagement and career competencies by using JD-R model (Demerouti & Bakker, 2014) and Career Competencies model (Akkermans et al, 2013a) as theoretical frameworks. As hypothesized, we found that perceived competence affects the perception of work conditions and associates with work engagement and career competencies.

The positive relationship between perceived competence, work engagement and career competencies is the result of satisfaction of basic needs (Deci & Ryan, 2000) and development of self-efficacy (Lent et al., 1994; Cates, 2014). It is likely that as the proficiency level increases, on one hand, the basic need for competence and autonomy are satisfied, and result with motivation in the form of work engagement, on the other hand, perception of self-efficacy increases and leads to career interest.

In conclusion, this study has provided a support for understanding of role of competencies at work place. Our results showed that mastering on competencies affects the perception of work conditions, and fosters work engagement and career competencies. Indicating that competencies result with performance not only through demonstration of critical behaviour, but also fostering work engagement and career competencies. These results also underline the value

of investigating role of related factors on work engagement and research on drivers of career competencies.

PART 3: GENERAL CONCLUSION

GENERAL CONCLUSION

6.1. Summary of the research

In this thesis, we cunducted two studies. The aim of first study was to identify the leadership competencies required to command a DMT. We explored the difference between commanding a dispersed team and collocated team and competencies that superior job performers should use in carrying out their job well (Spencer & Spencer, 1993; Vathanophas, 2006), in another terms, what differentiates a good dispersed team staff (leader and member) from a poor one. We also explored the participants' opinion about our Preliminary DMT Competency Model consisting of 45 competencies, which we developed basing on the relevant literature. Participants specifically evaluated the importance and required proficiency level of each competency defined in our model.

Results showed that (1) there are no major differences between commanding a dispersed team and collocated team; however, commanding a dispersed team requires more qualified leadership; (2) dispersed team commanders experience more challenges while determining entropy, providing logistic and administrative support, ensuring shared understanding, reaching and keeping standards and problem solving; (3) to overcome the difficulties stemming from dispersion, DMT commanders should be more focused on professional knowledge, sophisticated communication and feed-back system, using initiative, developing a control and coordination system, building trust and decision making.

Participants' reflections showed that the preliminary DMT competency model reflected the required competencies to be a fully successful dispersed team commander, each competency required at least an advanced level of proficiency, however, some specific leadership and membership competencies differentiated superior performers. We synthesized our results and proposed a refined DMT competency model, which consists of five competencies for dispersed team commanders, five competencies for dispersed team members and ten competencies for both team commanders and members (Table 3.9.).

The significance of our study comes from the conditions under which it was conducted. The study was conducted under the effects of dispersion and with the participation of dispersed team staff, not under simulated conditions with the participation of student teams.

The aim of second our study was to investigate the role of leadership competencies, which we defined in our first study, on work engagement and on career competencies of leaders by using JD-R Model (Bakker & Demerouti, 2014) and Career Competencies Model (Akkermans et al., 2013a) as theoretical framework. Specifically, we tested (1) the effects of

job resources (role clarity, possibilities for development and social support) and job demands (role conflict and work over load) on work engagement in military context; (2) weather perceived proficiency on leadership competencies could play a motivational role in the JD-R model; and (3) weather perceived proficiency on leadership competencies could have an effect on career competencies.

The findings of our study showed that (1) job resources (role clarity, possibilities for development, and social support) played a motivational role and leaded to increased engagement in the military context; (2) the proficiency level of an individual affected the perception of work conditions, depending on the proficiency level, some job resources may play a demotivational role, for example, for an expert level individual, supervisor support may be percepted as an external intervention and result with demotivation; (3) the proficiency level of an individual had direct effect on work engagement, and role clarity mediated the relationship between proficiency level of an individual and work engagement; (4) the proficiency level of an individual had direct effect on career competencies.

6.2. Main theoretical and practical implications

Our study contributes to the literature in following ways. First, we developed a competency model for effective performance in dispersed settings. Second, our study showed that proficiency level of an individual affected the perception of work conditions and resulted with increased engagement through role clarity. Third, this study demonstrated that mastering on competencies was not only important for job performance, but also work engagement and career development. To the best of our knowledge, our study is the first to integrate professional authenticity in the JD-R model (Demerouti et al., 2001) and Career Competencies model (Akkermans et al., 2013a). With our findings, we showed that mastering on competencies may influence employee well-being as well as career success.

Regarding the practical implications, the competency model and implications derived from the findings of this study may be valuable to the dispersed military teams or others concerned in developing the competence of staff and maximizing competent performance in an organization. In order to obtain effective performance, military organizations may have dispersed military team staff well equipped with these competencies.

The competencies identified in our model may be integrated into competency-based human resource management plans as follows. First, competencies should be included in job descriptions because a list of job responsibilities and the results of job tasks are not sufficient measures to ensure success; rather well-defined skill competencies for a position encourage job

incumbents to work more effectively (Tas et al., 1996). This study provides a competency model consisting of a list of competencies needed for dispersed team, therefore an effective job description for dispersed team staff may include the competencies defined in this study. Second, after developing a competency model, mastering on these competencies should be the next step in building the working capability of the employees in an organization. Our model not only defined the required competencies, but also demonstrated the need for required proficiency level in these competencies, thus military organizations may develop a competency-based curriculum addressing the areas of the twenty competencies proposed in our model. Finally, besides training and development, this competency model can be used for selection, performance management, compensation, career development, succession planning and management information systems (Spencer & Spencer, 1993).

Our results showed that not only aspects of the workplace, but also aspect of the person is related to work engagement. In order to create a positive effect on motivation and well-being, military organizations should focus on aspect of the person as well as positively valued aspects of the workplace, on training more competent personel, and on expressing clear role expectations. In addition, in order not to creat unexpected stress resources, job resources should be allocated according to personal attributes (i.e. proficiency level). Moreover, military organizations should consider that training more competent work force leads to development of career competencies, which also has reinforcing effect on work engagement.

6.3. Recommendations for future studies

According to JD-R literature, the presence of job demands and the absence of job resources positively associate with employees' burnout through an energetic process, the presence of job resources and personal resources are positively related to work engagement through a motivational process of JD-R model (Demerouti & Bakker, 2014). Several theoretical frames works are used to explain the motivational process, for example, it has been suggested that job resources lead directly to engagement (Conservation of Resources Theory; Hobfoll, 2002) or indirectly through, for instance, stimulating goal accomplishment (Goal Theory; Locke & Latham, 2002), enhancing employees' self-efficacy (Self-efficacy Theory; Bandura, 1997), or contributing to the satisfaction of their basic needs (Self-Determination Theory; Deci & Ryan, 2000).

For the future studies, in order to better explain the role of competencies on work engagement and on other proactive behaviours (i.e., Career competencies, job crafting) at workplace, our recommendation is to cunduct a longitudinal study which explores the variation

in the perception of need satisfaction, self-efficacy, work conditions and performance at each proficiency level.

To conclude, our study demonstrated that competencies are not only associate with performance, but also work engagement and career competencies. We hope that this study opens new avenues for understanding of dispersed teams and role of competencies on positive employee and organizational outcomes.

ACRONYMS

ACRONYMS

CCQ: Career Competencies Questionnaire

CLTs: Collocated Teams

COR: Conservation of Resources

DAO: Defense Attaché Offices

DATs: Defence Attaché Teams

DMT: Dispersed Military Team

ESU: Ensuring shared understanding

GDCs: Gendarmerie District Commands/Teams

GDMTs: Geographically dispersed military teams

GDTs: Geographically Dispersed Teams

JD-R: Job Demands-Resources

KDLG: Knowledge of doctrine and legal regulations

MIO: Motivating and influencing others

MOG: Managing organizational groups

NNPs: Neonatal Nurse Practitioners

PDT: Partially Dispersed Team

PO: Planning and organizing

SCC: Social Cognitive Career

UWES: Utrecht Work Engagement Scale

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APPENDICES

APPENDICES

Appendix-1: Preliminary DMT Commander Competency Model

Preliminary DMT Commander Competency Model

Competency	Action	Relevant Literature
Communication	Gives and receives information, ideas, and feelings with accuracy and understanding.	Privman (2009) Güçel (2007) Bos et al. (2005) Huang & Ocker (2006)
Teamwork	Works together in a cooperative environment to achieve common team goals through sharing knowledge and skills.	Holahan et al. (2011) Hsieh et al. (2012)
Ability to leverage the strengths of your team	Utilizes the strengths of his/her team such that the appropriate people are given tasks for which they are well suited.	Wolters et al. (2014)
Engages in self-development activities	Sets aside time for self-development, reflection, and personal growth. Sets personal goals and evaluating progress toward them. Seeks out opportunities where new capabilities can be developed	Hsieh et al. (2012)
Ability to create a learning organization	Encourages subordinates and others within the formation to seek new knowledge and develop their skills.	Güçel (2007)
Models the Army Values and Warrior Ethos	Displays behaviors consistent with Army Values and the Warrior Ethos	Wolters et al. (2014)
Problem solving	Anticipates, identifies, and defines problems. Seeks root causes. Develops and implements practical and timely solutions.	Hsieh et al. (2012) Güçel (2007)
Self-control	Refrains from acting upon his/her impulses and desires.	Hsieh et al. (2012)
Initiative	Identifies what needs to be done and takes action to achieve standard of excellence beyond job expectations.	Plotnik et al. (2008b) Hsieh et al., 2012 Künter (2014) Seçilmiş (2010)
Time management	Maintains a schedule that allows for accomplishment of necessary tasks without becoming overwhelmed.	Hsieh et al. (2012)
Crisis management	Plans and coordinates to prepare for, and respond to, threats that may prevent or impede operational activities.	Hsieh et al. (2012)
Decision making	Identifies problems, and opportunities; compares data from different sources to draw conclusions; uses effective approaches for choosing a course of action or developing appropriate solutions; takes action that is consistent with available facts, constraints, and probable consequences.	Bourgault et al. (2008)

Appendix-1: Preliminary DMT Commander Competency Model (Continued)

Competency	Action	Relevant Literature
Responsibility	Acknowledges and accepts the choices he/she has made, the actions he/she has taken, and the results they have led to.	Künter (2014) Güçel (2007)
Self-confidence	Believes that he/she possesses the ability to complete a certain task.	Künter (2014)
Planning and organizing	Divides the task into component parts and assigns responsibilities to each. Creates work packages.	O'Leary (2002) De Rooij (2009) Güçel (2007)
Resource management	Allocates financial resources appropriately so that all elements receive the required amount of support.	Wolters et al. (2014)
Achievement motivation	Has the motivation working hard and diligently to achieve success with the principle that today is better than yesterday.	Janz, Colquitt & Noe (1997) Güçel (2007)
Adaptability	Has an effective change in response to an altered situation.	Cramton et al. (2002) Salas, Sims & Burke (2005)
Interpersonal understanding	Understands others' perspectives, feelings, and motives.	Güçel (2007)
Change management	Plans, initiates, realizes, controls, and finally stabilizes change processes on both team and personal levels.	UNIDO Competencies (2002)
Managing organizational groups	Provides excellent leadership to help people perform at their best, through motivating and developing them to achieve high performance.	Army (2012) UNIDO Competencies (2002)
Information management	Collects, organizes, processes and maintains information.	UNIDO Competencies (2002)
Innovative and creative	Develops new insights into situations; questions conventional approaches; encourages new ideas and innovations; designs and implements new or cutting edge programs/processes.	Künter (2014)
Ability to build consensus	Influences his/her team to support a common method of behavior or way of thinking.	Wolters et al. (2014)
Mentoring and coaching	Uses his/her knowledge and experience to support the development of a more junior member of staff.	Key-Roberts (2014).
Appropriate Use of Technology	Has the ability to select and apply contemporary forms of technology to solve problems or compile information.	Willis (2010)

Appendix-1: Preliminary DMT Commander Competency Model (Continued)

Competency	Action	Relevant Literature
Cross-Cultural Management	Has enough knowledge, skills and motivation to adapt effectively in cross-cultural environments.	Shenkar et al. (2008) Vangen et al. (2014)
Building Trust	Interacts with others in a way that gives them confidence in his/her intentions and those of the organization.	Kramer (1999) Kanawattanachai & Yoo (2002)
Empowering others	Ha sthe ability to motivate individuals to unleash their full potential by enabling and encouraging them to more fully participate, to take action, risks and ownership of their decisions.	Künter (2014) Key-Roberts (2014).
Being decisive	Makes well-informed, effective, and timely decisions, even when data are limited or solutions produce unpleasant consequences.	Bourgault et al. (2008)
Taking risk	Takes calculated risks, weighing up pros and cons appropriately.	Künter (2014)
Flexibility	Adjusts his/her leadership style in response to different or changing contextual demands in a way that facilitates group performance.	Güçel (2007)
Open minded	Tolerates different cultures and positively accepts culture that is different from their own.	Çetinkaya (2009)
Motivating and influencing others	Has the ability to enhance others' commitment to their work. Affects opinions, judgments or behaviors of others through persuasion, mediation, and so forth; causes people to do or refrain from doing something.	Güçel (2007)
Ensuring Shared Understanding	Influences a group of people to support a common method of behavior or way of thinking. Creates and sustains esprit de corps and organizational culture.	Cramton (2002)
Exemplifying Sound Values and Behaviors	Displays behaviors consistent with organizational values.	Wolters et al. (2014)
Ability to influence inside and outside the formation	Convinces people inside and outside of the chain of command to adopt a position or course of action	Wolters et al. (2014)
Ability to create a culture of open communication	Creates a culture where asking for clarification is encouraged by the chain of command	Wolters et al. (2014)
Critical Thinking	Relates and compares information from different sources to identify potential cause-and-effect relations.	Wolters et al. (2014)

Appendix-1: Preliminary DMT Commander Competency Model (Continued)

Competency	Action	Relevant Literature
Extends Influence Beyond Chain of Command	Has the ability to negotiate, to build consensus and to resolve conflicts.	Army (2012)
Recognizing the strengths in one's team	Recognizes where members of his/her team are likely to excel and where they will experience challenges.	Wolters et al. (2014)
Creating an ethical climate	Cultivates a shared understanding of ethical conduct at all levels of the formation.	Künter (2014)
Self-awareness and self-understanding	Uses critical self-observation to evaluate strengths and limitations.	Ocker et al. (2012) Güçel (2007)
Knowledge of resources available to the team.	Has knowledge of the assets and enablers available and how to best use them.	Wolters et al. (2014)
Knowledge of doctrine and legal regulations	Has knowledge of the doctrine and legal regulations most relevant to team commanders.	Künter (2014) Wolters et al. (2014)

Job-analysis interviews, focus groups, questionnaires, job descriptions, competency-model formats are common tools for building a competency model (Mirabile,1997). In order to developed the "Preliminary DMT Commander Competency Model" we reviewed and analyzed relevant literature within military and business sectors (Chouhan & Srivastava, 2014; leadership manuals of the armies, DMT commander's instructions and task analysis, DMT leadership course contents and training notes). These activities resulted with the development of a "DMT Commander Competency list". Then we refined the list and selected specific competencies and defined the competencies and their key behavioral indicators by using instructions, task analysis and competency dictionaries.

Appendix-2: Survey (Study-1)
<div align="center">PART-1 (QUALITATIVE PART)</div>

Based on your experience, please give your assesments about the questions below.

1.   Please write down your opinion about the difference between commanding a distributed team and co-located team.
…………………………………………………………………………………………………...

2.   In your perspective what differentiates a good a distributed team leader/commander from a co-located team leader/commander?
…………………………………………………………………………………………………...

3.   In your perspective what are the main competencies (knowledge, skills, abilities, and other characteristics) that are needed to be a good distributed team leader/commander?
…………………………………………………………………………………………………...

4.   What differentiates a good a distributed team leader/commander from a poor one?

…………………………………………………………………………………………………...

5.   What differentiates a good a distributed team member/staff from a poor one?

…………………………………………………………………………………………………...

Please take a look at the draft competency list presented in the annex before answering the following questions.

6.   What would you say are the 10 most important competencies for a distributed team leader/commander to   possess?
…………………………………………………………………………………………………...

7.   What would you say are the 10 most important competencies for a distributed team member/staff to possess?
…………………………………………………………………………………………………...

8.   What competencies are required for serving in a distributed team for both commanders and members?
…………………………………………………………………………………………………...

9.   Does the draft competency model reflect the required competencies to be fully successful distributed team commander/leader ?

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Appendix-2: Survey (Continued)

PART-I (QUALITATIVE PART)

10.   What would you change concerning this competency list?

-   What would you add?

…………………………………………………………………………………………...

-   What would you delete?

…………………………………………………………………………………………...

11.   Write the competecies that should be terminologicaly changed and identify new competency proposed?

…………………………………………………………………………………………...

Appendix-2: Survey (Continued)

PART-II (QUANTITATIVE PART)

	What is the importance of the competencies in the "competency model" required to be a successful leader/commander in a distributed team? (1) - Strongly Disagree (2) - Disagree (3) - Neutral (4) - Agree (5) - Strongly Agree						What is the proficiency level required to commnad/lead a distributed team? (1) - No Proficiency Required (2) - Basic Level (3) - Intermediate Level (4) - Advanced level (5) – Expert Level				
Choose one number in each column - mark your choice with an "X".											
Communication	1	2	3	4	5		1	2	3	4	5
Teamwork	1	2	3	4	5		1	2	3	4	5
Ability to leverage the strengths of your team	1	2	3	4	5		1	2	3	4	5
Engages in self-development activities	1	2	3	4	5		1	2	3	4	5
Ability to create a learning organization	1	2	3	4	5		1	2	3	4	5
Models the Army Values and Warrior Ethos	1	2	3	4	5		1	2	3	4	5
Problem solving	1	2	3	4	5		1	2	3	4	5
Self-control	1	2	3	4	5		1	2	3	4	5

Appendix-2: Survey (Continued)

PART-II (QUANTITATIVE PART)

	What is the importance of the competencies in the "competency model" required to be a successful leader/commander in a distributed team? (1) - Strongly Disagree (2) - Disagree (3) - Neutral (4) - Agree (5) - Strongly Agree						What is the proficiency level required to commnad/lead a distributed team? (1) - No Proficiency Required (2) - Basic Level (3) - Intermediate Level (4) - Advanced level (5) - Expert Level				
Choose one number in each column - mark your choice with an "X".											
Initiative	1	2	3	4	5		1	2	3	4	5
Time management	1	2	3	4	5		1	2	3	4	5
Crisis management	1	2	3	4	5		1	2	3	4	5
Decision making	1	2	3	4	5		1	2	3	4	5
Responsibility	1	2	3	4	5		1	2	3	4	5
Self-confidence	1	2	3	4	5		1	2	3	4	5
Planning and organizing	1	2	3	4	5		1	2	3	4	5
Resource management	1	2	3	4	5		1	2	3	4	5

Appendix-2: Survey (Continued)

PART-II (QUANTITATIVE PART)

	What is the importance of the competencies in the "competency model" required to be a successful leader/commander in a distributed team? (1) - Strongly Disagree (2) - Disagree (3) - Neutral (4) - Agree (5) - Strongly Agree					What is the proficiency level required to commnad/lead a distributed team? (1) - No Proficiency Required (2) - Basic Level (3) - Intermediate Level (4) - Advanced level (5) - Expert Level				
Choose one number in each column - mark your choice with an "X".										
Achievement motivation	1	2	3	4	5	1	2	3	4	5
Adaptability	1	2	3	4	5	1	2	3	4	5
Interpersonal understanding	1	2	3	4	5	1	2	3	4	5
Change management	1	2	3	4	5	1	2	3	4	5
Managing organizational groups	1	2	3	4	5	1	2	3	4	5
Information management	1	2	3	4	5	1	2	3	4	5
Innovative and creative	1	2	3	4	5	1	2	3	4	5

Appendix-2: Survey (Continued)

PART-II (QUANTITATIVE PART)

	What is the importance of the competencies in the "competency model" required to be a successful leader/commander in a distributed team? (1) - Strongly Disagree (2) - Disagree (3) - Neutral (4) - Agree (5) - Strongly Agree						What is the proficiency level required to commnad/lead a distributed team? (1) - No Proficiency Required (2) - Basic Level (3) - Intermediate Level (4) - Advanced level (5) – Expert Level				
Choose one number in each column - mark your choice with an "X".											
Ability to build consensus	1	2	3	4	5		1	2	3	4	5
Mentoring and coaching	1	2	3	4	5		1	2	3	4	5
Appropriate Use of Technology	1	2	3	4	5		1	2	3	4	5
Cross-Cultural Management	1	2	3	4	5		1	2	3	4	5
Building Trust	1	2	3	4	5		1	2	3	4	5
Empowering others	1	2	3	4	5		1	2	3	4	5
Being decisive	1	2	3	4	5		1	2	3	4	5

Appendix-2: Survey (Continued)

PART-II (QUANTITATIVE PART)

	What is the importance of the competencies in the "competency model" required to be a successful leader/commander in a distributed team? (1) - Strongly Disagree (2) - Disagree (3) - Neutral (4) - Agree (5) - Strongly Agree						What is the proficiency level required to commnad/lead a distributed team? (1) - No Proficiency Required (2) - Basic Level (3) - Intermediate Level (4) - Advanced level (5) – Expert Level				
Choose one number in each column - mark your choice with an "X".											
Taking risk	1	2	3	4	5		1	2	3	4	5
Flexibility	1	2	3	4	5		1	2	3	4	5
Open minded	1	2	3	4	5		1	2	3	4	5
Motivating and influencing others	1	2	3	4	5		1	2	3	4	5
Ensuring Shared Understanding	1	2	3	4	5		1	2	3	4	5
Ability to influence inside and outside the formation	1	2	3	4	5		1	2	3	4	5
Ability to create a culture of open communication	1	2	3	4	5		1	2	3	4	5

Appendix-2: Survey (Continued)

PART-II (QUANTITATIVE PART)

	What is the importance of the competencies in the "competency model" required to be a successful leader/commander in a distributed team? (1) - Strongly Disagree (2) - Disagree (3) - Neutral (4) - Agree (5) - Strongly Agree					What is the proficiency level required to commnad/lead a distributed team? (1) - No Proficiency Required (2) - Basic Level (3) - Intermediate Level (4) - Advanced level (5) - Expert Level				
Choose one number in each column - mark your choice with an "X".										
Critical Thinking	1	2	3	4	5	1	2	3	4	5
Extends Influence Beyond Chain of Command	1	2	3	4	5	1	2	3	4	5
Recognizing the strengths in one's team	1	2	3	4	5	1	2	3	4	5
Creating an ethical climate	1	2	3	4	5	1	2	3	4	5
Knowledge of resources available to the team	1	2	3	4	5	1	2	3	4	5
Knowledge of doctrine and legal regulations	1	2	3	4	5	1	2	3	4	5
Exemplfying sound values and behaviors	1	2	3	4	5	1	2	3	4	5
Self-awareness and self-understanding	1	2	3	4	5	1	2	3	4	5

Appendix-3: Preliminary DMT Commander Competency Model Importance Ratings
Preliminary DMT Commander Competency Model Importance Ratings
(Sorted in Ordered of Descending Importance)

S/N	Competency Name	Dispersed Military Team (DMT) Staff (N=44)		Gendarmerie District Commands/Team (GDC) Staff (N=29)		Defense Attaché Team (DAT) Staff (N=15)	
		Mean	SD	Mean	SD	Mean	SD
1	Problem solving	4,77	0,68	4,76	0,79	4,8	0,41
2	Initiative	4,77	0,68	4,76	0,79	4,8	0,41
3	Decision making	4,77	0,71	4,66	0,86	5	0
4	Responsibility	4,77	0,52	4,83	0,47	4,67	0,62
5	Managing organizational groups	4,75	0,72	4,69	0,85	4,87	0,35
6	Communication	4,73	0,69	4,66	0,81	4,87	0,35
7	Ensuring Shared Understanding	4,73	0,59	4,69	0,66	4,8	0,41
8	Crisis management	4,70	0,51	4,66	0,55	4,8	0,41
9	Self-confidence	4,68	0,74	4,66	0,81	4,73	0,59
10	Motivating and influencing others	4,68	0,71	4,62	0,82	4,8	0,41
11	Planning and organizing	4,66	0,75	4,56	0,87	4,87	0,35
12	Building Trust	4,66	0,61	4,59	0,68	4,8	0,41
13	Being decisive	4,66	0,71	4,48	0,83	5	0
14	Exemplifying Sound Values and Behaviors	4,66	0,64	4,66	0,55	4,67	0,82

Appendix-3: Preliminary Competency Model Importance Ratings (Continued)

S/N	Competency	DMT Staff (N=44)		GDC Staff (N=29)		DAT Staff (N=15)	
		Mean	SD	Mean	SD	Mean	SD
15	Models the Army Values and Warrior Ethos	4,64	0,61	4,69	0,60	4,67	0,72
16	Knowledge of resources available to the team.	4,64	0,65	4,59	0,68	4,73	0,59
17	Recognizing the strengths in one's team	4,61	0,62	4,55	0,69	4,73	0,46
18	Teamwork	4,59	0,87	4,62	0,82	4,53	0,99
19	Creating an ethical climate	4,59	0,73	4,76	0,44	4,27	1,03
20	Knowledge of doctrine and legal regulations	4,55	0,80	4,59	0,68	4,53	1,06
21	Self-awareness and self-understanding	4,5	0,76	4,41	0,82	4,67	0,62
22	Self-control	4,48	0,76	4,55	0,63	4,33	0,98
23	Achievement motivation	4,48	0,70	4,52	0,74	4,4	0,63
24	Empowering others	4,48	0,55	4,41	0,57	4,6	0,51
25	Open minded	4,45	0,63	4,38	0,68	4,6	0,51
26	Time management	4,41	0,69	4,31	0,66	4,6	0,74
27	Ability to influence inside and outside the formation	4,41	0,79	4,49	0,78	4,27	0,80
28	Ability to leverage the strengths of your team	4,39	0,84	4,34	0,86	4,47	0,83

Appendix-3: Preliminary Competency Model Importance Ratings (Continued)

S/N	Competency	DMT Staff (N=44)		GDC Staff (N=29)		DAT Staff (N=15)	
		Mean	SD	Mean	SD	Mean	SD
29	Resource management	4,39	0,62	4,31	0,66	4,53	0,52
30	Ability to create a culture of open communication	4,39	0,81	4,24	0,91	4,67	0,49
31	Interpersonal understanding	4,34	0,64	4,38	0,73	4,27	0,46
32	Appropriate Use of Technology	4,32	0,77	4,31	0,71	4,33	0,90
33	Flexibility	4,32	0,88	4,24	0,95	4,47	0,74
34	Ability to build consensus	4,30	0,79	4,24	0,74	4,4	0,91
35	Adaptability	4,25	0,75	4,21	0,77	4,33	0,72
36	Taking risk	4,25	0,87	4,21	0,86	4,33	0,90
37	Mentoring and coaching	4,23	0,86	4,24	0,79	4,2	1,01
38	Information management	4,20	0,85	4,17	0,76	4,27	1,03
39	Cross-Cultural Management	4,20	0,79	4,10	0,8596	4,4	0,63
40	Extends Influence Beyond Chain of Command	4,16	0,91	3,93	0,96	4,6	0,63
41	Critical Thinking	4,14	0,77	4,03	0,78	4,33	0,72
42	Engages in self-development activities	4,11	0,78	4,24	0,74	3,87	0,83
43	Innovative and creative	4,07	0,82	4,10	0,77	4	0,93
44	Change management	4,02	0,90	3,97	0,94	4,13	0,83
45	Ability to create a learning organization	3,95	1,14	4,03	1,15	3,8	1,15

Appendix-4: Preliminary DMT Commander Competency Model Proficiency Ratings
Preliminary DMT Commander Competency Model Proficiency Ratings
(Sorted in Ordered of Descending Proficiency)

S/N	Competency Name	Dispersed Military Team (DMT) Staff (N=44)		Gendarmerie District Commands/Team(GDC) Staff (N=29)		Defense Attaché Team (DAT) Staff (15)	
		Mean	SD	Mean	SD	Mean	SD
1	Knowledge of doctrine and legal regulations	4,55	0,79	4,55	0,74	4,53	0,92
2	Responsibility	4,5	0,63	4,55	0,57	4,4	0,74
3	Initiative	4,48	0,79	4,34	0,90	4,73	0,46
4	Crisis management	4,48	0,66	4,41	0,73	4,6	0,51
5	Decision making	4,48	0,82	4,38	0,94	4,67	0,49
6	Managing organizational groups	4,48	0,85	4,34	0,97	4,73	0,46
7	Building Trust	4,48	0,63	4,34	0,67	4,73	0,46
8	Ensuring Shared Understanding	4,48	0,66	4,41	0,73	4,6	0,51
9	Exemplifying Sound Values and Behaviors	4,43	0,70	4,41	0,68	4,47	0,74
10	Knowledge of resources available to the team.	4,41	0,66	4,38	0,68	4,47	0,64
11	Being decisive	4,36	0,84	4,21	0,94	4,67	0,49
12	Motivating and influencing others	4,36	0,81	4,45	0,83	4,2	0,77
13	Recognizing the strengths of team	4,36	0,69	4,24	0,74	4,6	0,51

Appendix-4: Preliminary Competency Model Proficiency Ratings (Continued)

S/N	Competency	DMT Staff (N=44)		GDC Staff (N=29)		DAT Staff (N=15)	
		Mean	SD	Mean	Mean	SD	Mean
14	Problem solving	4,27	0,82	4,17	0,93	4,47	0,52
15	Ability to influence inside and outside the formation	4,25	0,72	4,31	0,71	4,13	0,74
16	Creating an ethical climate	4,25	0,84	4,31	0,71	4,13	1,06
17	Self-awareness and self-understanding	4,25	0,81	4,24	0,87	4,27	0,70
18	Self-confidence	4,23	0,80	4,17	0,89	4,33	0,62
19	Planning and organizing	4,23	0,77	4	0,80	4,67	0,49
20	Communication	4,20	0,76	4,07	0,84	4,47	0,52
21	Self-control	4,18	0,84	4,14	0,79	4,27	0,96
22	Models the Army Values and Warrior Ethos	4,16	0,91	4,38	0,82	4,33	0,90
23	Mentoring and coaching	4,16	0,71	4,07	0,75	4,33	0,62
24	Teamwork	4,14	0,85	4,07	0,92	4,27	0,70
25	Resource management	4,14	0,63	4	0,65	4,4	0,51
26	Ability to build consensus	4,14	0,70	4	0,71	4,4	0,63
27	Empowering others	4,14	0,80	4,07	0,84	4,27	0,70

Appendix-4: Preliminary Competency Model Proficiency Ratings (Continued)

S/N	Competency	DMT Staff (N=44)		GDC Staff (N=29)		DAT Staff (N=15)	
		Mean	SD	Mean	Mean	SD	Mean
28	Ability to create a culture of open communication	4,14	0,77	3,97	0,78	4,47	0,64
29	Achievement motivation	4,11	0,69	4,10	0,72	4,13	0,64
30	Time management	4,09	0,60	3,93	0,53	4,4	0,63
31	Cross-Cultural Management	4,09	0,94	3,97	0,94	4,33	0,90
32	Ability to leverage the strengths of your team	4,07	0,85	3,90	0,86	4,4	0,74
33	Open minded	4,07	0,73	3,93	0,70	4,33	0,72
34	Interpersonal understanding	4	0,84	3,93	0,84	4,13	0,83
35	Flexibility	3,95	0,83	3,83	0,89	4,2	0,68
36	Taking risk	3,93	1,07	3,86	1,06	4,07	1,10
37	Extends Influence Beyond Chain of Command	3,93	0,95	3,69	1,00	4,4	0,63
38	Adaptability	3,91	0,80	3,79	0,82	4,13	0,74
39	Information management	3,91	0,83	3,79	0,82	4,13	0,83
40	Engages in self-development activities	3,86	0,85	3,86	0,74	3,87	1,06
41	Appropriate Use of Technology	3,80	0,70	3,72	0,65	3,93	0,80
42	Innovative and creative	3,75	0,81	3,69	0,76	3,87	0,92
43	Critical Thinking	3,68	0,91	3,55	0,99	3,93	0,70
44	Change management	3,61	0,99	3,45	1,02	3,93	0,88
45	Ability to create a learning organization	3,43	0,99	3,35	0,97	3,6	1,05

Appendix-5: Survey (Study-2)

Please share your reflections regarding the following questions by placing an "X" in the boxes.

Job resources - Role Clarity	Do you know exactly how much say you have at work?	To a very large extent	To a large extent	Somewhat	To a small extent	To a very small extent
	Does your work have clear objectives?	To a very large extent	To a large extent	Somewhat	To a small extent	To a very small extent
	Do you know exactly which areas are your responsibility?	To a very large extent	To a large extent	Somewhat	To a small extent	To a very small extent
	Do you know exactly what is expected of you at work?	To a very large extent	To a large extent	Somewhat	To a small extent	To a very small extent
Job resources - Possibilities For Development	Do you have the possibility of learning new things via work?	To a very large extent	To a large extent	Somewhat	To a small extent	To a very small extent
	Can you use your skills or expertise in your work?	To a very large extent	To a large extent	Somewhat	To a small extent	To a very small extent
	Does your work give opportunity to develop your skills?	To a very large extent	To a large extent	Somewhat	To a small extent	To a very small extent
	Does your work require you to take the initiative?	To a very large extent	To a large extent	Somewhat	To a small extent	To a very small extent
	Is your work varied?	Always	Often	Sometimes	Seldom	Never
	Does your work demand a high level of skill or expertise?	Always	Often	Sometimes	Seldom	Never
	Do you have to do the same thing over and over again?	Always	Often	Sometimes	Seldom	Never

Appendix-5: Survey (Study-2; continued)

Please share your reflections regarding the following questions by placing an "X" in the boxes.

		Always	Often	Sometimes	Seldom	Never
Job resources – Social support	How often do you get help and support from your colleagues?	Always	Often	Sometimes	Seldom	Never
	How often are your colleagues willing to listen to your work related problems?	Always	Often	Sometimes	Seldom	Never
	How often do you get help and support from your immediate superior?	Always	Often	Sometimes	Seldom	Never
	How often is your immediate superior willing to listen to your work related problems?	Always	Often	Sometimes	Seldom	Never
Job demands – Work overload	I feel that the number of requests, problems, or compaints I deal with is more than expected.	Always	Often	Sometimes	Seldom	Never
	I feel that the amount of work I do interferes with how well it is done.	Always	Often	Sometimes	Seldom	Never
	I feel busy or rushed.	Always	Often	Sometimes	Seldom	Never
	I feel pressured.	Always	Often	Sometimes	Seldom	Never

Appendix-5: Survey (Study-2; continued)

Please share your reflections regarding the following questions by placing an "X" in the boxes.

Job demands – Role conflict	Do you do things at work, which are accepted by some people but not by others?	To a very large extent	To a large extent	Somewhat	To a small extent	To a very small extent
	Are contradictory demands placed on you at work?	To a very large extent	To a large extent	Somewhat	To a small extent	To a very small extent
	Do you sometimes have to do things, which ought to have been done in a different way?	To a very large extent	To a large extent	Somewhat	To a small extent	To a very small extent
	Do you sometimes have to do things, which seem to you to be unnecessary?	To a very large extent	To a large extent	Somewhat	To a small extent	To a very small extent

Appendix-5: Survey (Study-2; continued)

Please share your reflections regarding the following questions by placing an "X" in the boxes.

Work engagement						
	At my work, I feel bursting with energy.	Always	Often	Sometimes	Seldom	Never
	At my job, I feel strong and vigorous.	Always	Often	Sometimes	Seldom	Never
	I am enthusiastic about my job.	Always	Often	Sometimes	Seldom	Never
	My job inspires me.	Always	Often	Sometimes	Seldom	Never
	When I get up in the morning, I feel like going to work.	Always	Often	Sometimes	Seldom	Never
	I feel happy when I am working intensely.	Always	Often	Sometimes	Seldom	Never
	I am proud of the work that I do.	Always	Often	Sometimes	Seldom	Never
	I am immersed in my work.	Always	Often	Sometimes	Seldom	Never
	I get carried away when I am working.	Always	Often	Sometimes	Seldom	Never
	At my work, I feel bursting with energy.	Always	Often	Sometimes	Seldom	Never

Appendix-5: Survey (Study-2; continued)

Please share your reflections regarding the following questions by placing an "X" in the boxes.

Leadership competencies	I can identify what needs to be done and take neccessary actions before being asked (*Initiative*).	No Proficiency	Basic	Intermediate	Advanced	Expert
	I can give and receive information, ideas, and feelings with accuracy and understanding (*Communication*).	No Proficiency	Basic	Intermediate	Advanced	Expert
	I can define problems and seek root causes, develop and implement practical and timely solutions (*Problem solving*).	No Proficiency	Basic	Intermediate	Advanced	Expert
	I can use effective approaches for choosing a course of action or developing appropriate solutions (*Decision making*).	No Proficiency	Basic	Intermediate	Advanced	Expert
	I can divide the task into component parts and assign responsibilities to my staff (*Planning and organizing*)	No Proficiency	Basic	Intermediate	Advanced	Expert
	I can enhance my staff's commitment to their work and affect my staff's opinions, judgments or behaviors of by persuasion and mediation (*Motivating and influencing others*)	No Proficiency	Basic	Intermediate	Advanced	Expert
	I can influence my staff to support a common method of behavior or way of thinking (*Ensuring Shared Understanding*)	No Proficiency	Basic	Intermediate	Advanced	Expert
	I have enough knowledge of the doctrine and legal regulations most relevant to my work (*Knowledge of doctrine and legal regulations*)	No Proficiency	Basic	Intermediate	Advanced	Expert
	I can lead my staff to achieve high performance (*Managing Organizational Groups*)	No Proficiency	Basic	Intermediate	Advanced	Expert
	I accept the choices I have made and the results they have led to (*Responsibility*)	No Proficiency	Basic	Intermediate	Advanced	Expert

Appendix-5: Survey (Study-2; continued)

Please share your reflections regarding the following questions by placing an "X" in the boxes.

Career competencies (Reflection on	I know what I like in my work.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	I know what is important to me in my career.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	I can clearly see what my passions are in my work.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Career competencies (Reflection on qualities)	I know my strengths in my work.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	I am familiar with my shortcomings in my work.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	I am aware of my talents in my work.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	I know which skills I possess.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Career competencies (Networking)	I know a lot of people within my work who can help me with my career.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	I know a lot of people outside of my work who can help me with my career.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	I know how to ask for advice from people in my network.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	I am able to approach the right persons to help me with my career.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Appendix-5: Survey (Study-2; continued)

Please share your reflections regarding the following questions by placing an "X" in the boxes.

Career competencies (Self-profiling)	I can clearly show others what my strengths are in my work.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	I am able to show others what I want to achieve in my career.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	I can show the people around me what is important to me in my work.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Career competencies (Work exploration)	I know how to find out what my options are for becoming further educated.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	I know how to search for developments in my area of work.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	I am able to explore my possibilities on the labor market.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Career competencies (Career control)	I can make clear career plans.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	I know what I want to have achieved in my career a year from now.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	I can create a layout for what I want to achieve in my career.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	I am able to set goals for myself that I want to achieve in my career.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Thank you very much for your contribution.

Appendix-6 (Factor analysis results)

Factor Analysis Results and Reliability of Possibilities for Development Scale

Item Nu.	Scale	Factor Loading	Cronchbach's alpha	Explained Variance
	Possibilities for development		.69	53.28
1	Do you have the possibility of learning new things through your work?	.82		
2	Can you use your skills or expertise in your work?	.76		
3	Does your work give you the opportunity to develop skills?	.86		
4	Does your work give you the opportunity to develop skills?	.54		
5	Is your work varied? (Excluded)	.35		
6	Does your work demand a high level of skill or expertise?	.62		
7	Do you have to do the same thing over and over again? (Excluded)	-.20		

KMO=.75; Chi-Square Bartlett's Test=132.95; P=.000

Factor Analysis Results and Reliability of Social Support Scale

Item Nu.	Scale	Factor Loading	Cronchbach's alpha	Explained Variance
	Social Support		.71	53.86
1	How often do you get help and support from your colleagues?	.68		
2	How often are your colleagues willing to listen to your work related problems?	.74		
3	How often do you get help and support from your immediate superior?	.76		
4	How often is your immediate superior willing to listen to your work related problems?	.76		

KMO=.59; Chi-Square Bartlett's Test=96.70; P=.000

Appendix-6 (Factor analysis results; continued)

Factor Analysis Results and Reliability of Role Clarity Scale

Item Nu.	Scale	Factor Loading	Cronchbach's alpha	Explained Variance
	Role Clarity		.82	65.39
1	Do you know exactly how much say you have at work?	.71		
2	Does your work have clear objectives?	.77		
3	Do you know exactly which areas are your responsibility?	.88		
4	Do you know exactly what is expected of you at work?	.86		

KMO=.76; Chi-Square Bartlett's Test=129.176; P=.000

Factor analysis results and reliability of role conflict scale

Item Nu.	Scale	Factor Loading	Cronchbach's alpha	Explained Variance
	Role Conflict		.83	66.01
1	Do you do things at work, which are accepted by some people but not by others?	.78		
2	Are contradictory demands placed on you at work?	.85		
3	Do you sometimes have to do things, which ought to have been done in a different way?	.86		
4	Do you sometimes have to do things, which seem to you to be unnecessary?	.76		

KMO=.80; Chi-Square Bartlett's Test=123.71; P=.000

Factor Analysis Results and Reliability of Work Overload Scale

Item Nu.	Scale	Factor Loading	Cronchbach's alpha	Explained Variance
	Work Overload		.75	57.42
1	I feel that the number of requests, problems, or complaints I deal with is more than expected.	.70		
2	I feel that the amount of work I do interferes with how well it is done.	.71		
3	I feel busy or rushed.	.86		
4	I feel pressured.	.75		

KMO=.65; Chi-Square Bartlett's Test=90.97; P=.000

Appendix-6 (Factor analysis results; continued)

Factor Analysis Results and Reliability of Competencies Proficiency Level Scale

Item Nu.	Scale	Factor Loading	Cronchbach's alpha	Explained Variance
	Leadership competencies proficiency level		.92	60.67
1	I can identify what needs to be done and take necessary actions before being asked.	.78		
2	I can give and receive information, ideas, and feelings with accuracy and understanding.	.77		
3	I can define problems and seek root causes, develop and implement practical and timely solutions.	.75		
4	I can use effective approaches for choosing a course of action or developing appropriate solutions.	.76		
5	I can divide the task into component parts and assign responsibilities to my staff.	.83		
6	I can enhance my staff's commitment to their work and affect their opinions, judgments or behaviors.	.84		
7	I can influence my staff to support a common method of behavior or way of thinking.	.83		
8	I have enough knowledge of the doctrine and legal regulations most relevant to my work.	.73		
9	I can lead my staff to achieve high performance.	.81		
10	I accept the choices I have made and the results they led to	.69		

KMO=.88; Chi-Square Bartlett's Test=592.17; P=.000

Appendix-6 (Factor analysis results; continued)

Factor Analysis Results and Reliability of Career Competencies Scale

Item No	Scale	Factor Loading	Cronchbach's alpha	Explained Variance
	Career competencies		.93	45.44
	Reflection on motivation		.84	
1	I know what I like in my work.	.69		
2	I know what is important to me in my career.	.72		
3	I can clearly see what my passions are in my work.	.76		
	Reflection on qualities		.88	
4	I know my strengths in my work.	.64		
5	I am familiar with my shortcomings in my work.	.73		
6	I am aware of my talents in my work.	.67		
7	I know which skills I possess.	.79		
	Networking		.81	
8	I know many people at work who can help me with my career.	.50		
9	I know many people out of work who can help me with my career.	.57		
10	I know how to ask for advice from people in my network.	.64		
	Self-profiling		.88	
11	I can approach the right persons to help me with my career.	.61		
12	I can clearly show others what my strengths are in my work.	.70		
13	I am able to show others what I want to achieve in my career.	.77		
	Work exploration		.68	
14	I can show people what is important to me in my work.	.72		
15	I know how to find options are for becoming further educated.	.70		
16	I know how to search for developments in my area of work.	.67		
17	I can explore my possibilities on the labor market. (Excluded)	.46		
	Career control		.87	
18	I can make clear career plans.	.55		
19	I know what I want to have achieved in my career a year from now.	.66		
20	I can create a layout for what I want to achieve in my career.	.73		
21	I can set goals for myself that I want to achieve in my career.	.60		

KMO=.87; Chi-Square Bartlett's Test=1129.29; P=.000

Appendix-7 (Sobel Test)

Sobel Test				
Input		Test statistic	Std. Error	p-value
a	0.251	2.17432831	0.04398186	0.02968049
b	0.381	a = raw (unstandardized) regression coefficient for the association between leadership competencies (IV) and role clarity (mediator). s_a = standard error of a.		
s_a	0.097			
s_b	0.095	b = raw coefficient for the association between the role clarity (mediator) and the work engagement (DV) (when the IV is also a predictor of the DV). s_b = standard error of b.		