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EXPLORING THE CHANGING EFFECTS OF INDIVIDUAL DIFFERENCES  
ON SOCIAL STATUS OF INFLUENCE

by

Wonho Jeung

A DISSERTATION

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EXPLORING THE CHANGING EFFECTS OF INDIVIDUAL DIFFERENCES  
ON SOCIAL STATUS OF INFLUENCE

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University of Nebraska, 2013

Advisor: Peter D. Harms

Social status and hierarchies of social status are ubiquitous. Because of this, they have been addressed in a great number of philosophical, theoretical, and empirical discussions across a variety of fields of studies. A primary focus of attention has been on the role of human agency, most notably trait theory (i.e., personality theory). Despite a number of studies in this topic, there have been two notable limitations in extant studies. First, previous studies have largely been based on a singular perspective in explaining social status, most representatively ability (e.g., intelligence) and personality traits (e.g., Big-Five personality traits). Second, extant studies have implicitly assumed that the relationships are static, and the predominant use of cross-sectional research designs hinders explanation of dynamic relationships between personality and social status. In order to address these limitations, this study explores the role of multiple domains of individual differences in explaining social status in the longitudinal setting.

The findings support the fundamental premise of this study that the relationships between individual differences and social status are more dynamic and complex than previous studies implicitly assumed. Intelligence, extraversion, and non-calculative motivation to lead have incremental effects above and beyond other variables but do not have changing effects across different stages of group development. Emotional

intelligence has incremental effects as well as changing effects over time.

Conscientiousness and affective/identity motivation to lead do not have incremental effects over an array of other individuals differences, but do have positive changing effects over time. Neuroticism does not have incremental effects but has negative changing effects over time. Finally, openness to experience does not have incremental effects, nor does it have changing effects over time. The findings of this study contribute to research dedicated to advancing understanding of the role of individual differences on social status.

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## CHAPTER I

### INTRODUCTION

#### Background

Status is one of the most important factors of human relationships and in human society (Ganzeboom & Treiman, 1996). Not only are hierarchies ubiquitous in human social groups (Anderson, John, Keltner, & Kring, 2001; Hogan, 1983, 1991), but the relative position of an individual in a hierarchy has been shown to be related to a number of important outcomes. Higher social status is related to positive health outcomes (Hemingway, Nicholson, Stafford, Roberts, & Marmot, 1997) and psychological well-being (Adler, Epel, Casterllazzo, & Ickovic, 2000; Keltner, Young, Heerey, Oemig, & Monarch, 1998). People with higher social status are also more likely to have access to resources and to be perceived to possess power (Ibarra, 1993; Ibarra & Andrews, 1993; Krackhardt, 1990).

Since the beginning of recorded history, philosophers and scholars have questioned not only the process by which some individuals come into positions of power and influence, but also debated who *should* be in positions of authority (e.g., Plato's Republic, Homer's Illiad, Machiavelli's The Prince, Hobbes' Leviathan, Locke's On Liberty, etc.). One persistent focus has been that there may be differences in character and ability that distinguish those who possess prestigious and influential positions from those who do not.

Trait theory is the most widely applied approach for understanding why some individuals achieve positions of prominence and some do not. In particular, the "great man" theory of leadership, which is the oldest approach of modern leadership theory,

tried to explain leadership based on the inherited and unique attributes of extraordinary leaders (e.g., Carlyle, 1846; Galton, 1869). The subsequent trait approaches became the most dominant approach in leadership studies during the first half of the 20<sup>th</sup> century. Although trait approaches fell out of favor for some time, they have recently re-emerged as one of the most influential approaches to understanding leadership today (e.g., Berger, Cohen & Zelditch, 1972; Flynn, Reagans, Amanatulla, & Ames, 2006; Judge, Bono, Ilies, & Gerhardt, 2002; Klein, Lim, Saltz, & Mayer, 2004; Mehra, Kilduff, & Brass, 2001; Ridgeway, 1991; Ridgeway, Diekema, & Johnson, 1995).

The initial studies of the trait approach focused largely on who emerges as a leader. In order to answer this question, a large number of studies have examined why certain people emerge as leaders in organizations. Leader emergence has linked to a broad spectrum of individual differences. Specifically, the likelihood of emerging as a leader has been associated with traits such as Big Five personality traits (Hogan, Curphy & Hogan, 1994; Judge et al., 2002), dominance and masculinity-femininity (Lord, De Vader, & Alliger, 1986), self-monitoring (Dobbins, Long, Dedrick, & Clemons, 1990; Garland & Beard, 1979; Kent & Moss, 1990), and narcissistic personality (e.g., Paunonen, Lonqvist, Verkasalo, Leikas, & Nissinen, 2006), abilities such as intelligence (Lord et al., 1986) and emotional intelligence (Côté Lopes, Salovey, & Miners, 2010; Wolff, Pescosolido, & Druskat, 2002), and motives such as motivation to lead (Chan & Drasgow, 2001; Luria & Berson, in press).

Similarly, drawing from social network perspectives, previous research has demonstrated that traits are related to social positions in social networks (e.g., Mehra et al., 2001; Klein et al., 2004; Sasovova, Mehra, Borgatti, & Schippers, 2010). For

example, Mehra et al. (2001) found that self-monitoring is related to social network centrality. In a similar vein, Klein et al. (2004) investigated how Big Five personality traits are related to centrality in social networks.

Consequently, there is a widespread consensus among scholars that individual differences in personality traits and abilities contribute to attaining social status and explain the nature of hierarchies in social groups (Berger et al., 1972; Flynn et al., 2006; Judge et al., 2002; Ridgeway, 1991; Ridgeway et al., 1995). Thus, certain domains of individual characteristics attribute one to possess prestigious positions in the network of social groups. It should be noted here that, in building the theoretical arguments, this study will integrate previous studies which have been conducted in closely-related fields, for instance, informal leader emergence, social network centrality, and social status considering the context of this study (see Scope and Context of the Study section in Chapter 1 and Chapter 2 for further discussion).

### **Problem Statement**

Previous studies have found that individual differences play important roles in explaining social status. However, there are some limitations which these studies have underestimated that need to be addressed. First, although prior literature suggests that multiple domains of individual differences are related to social status, nearly all existing research has focused on a single domain of individual differences, most often either the Big Five personality traits (e.g., Anderson et al., 2001; Judge et al., 2002; Klein et al., 2004) or cognitive ability (e.g., Judge, Colbert, & Ilies, 2004). In particular, previous meta-analytic analyses which examined the relationship between each domain of individual differences have been primarily based on a single domain of individual

differences. For example, Judge et al. (2002) focused primarily on the effects of Big-Five personality traits on leadership outcomes. Similarly, Klein et al. (2004) examined the role of demographics and the Big-Five personality traits on social network centrality.

However, these meta-analytic reviews ignored major aspects of personality that may be predictive of both leadership and network positions. Consequently, to get a more complete picture of the role of personality as an antecedent of status, there is a need to integrate the existing literature on the relationship between individual differences and social status. Specifically, a fuller understanding of the role of personality can only really be attained when studies utilize multiple theoretical domains of personality (Roberts, Harms, Smith, Wood, & Webb, 2006). In a similar vein, DeRue, Nahrgang, Wellman, and Humphrey (2011) argue that, “The primary criticism is that leadership scholars create new theories of leadership without attempting to compare and contrast the validity of existing theories” (p. 8). They suggested the need to integrate the various effects of individual differences across a broad spectrum of traits.

Another notable problem in the existing literature is that nearly all of the extant research is cross-sectional and based on the implicit assumption that the effects of determinants of status are relatively stable across time (e.g., Bingham, Oldroyd, Thompson, Bednar, & Bunderson, in press; Judge et al., 2002; Judge et al., 2004; Klein et al., 2004). This assumption remains largely untested by prior research. A number of scholars have suggested that understanding dynamic phenomena in a group requires taking into account the process of group evolution over time (e.g., Ilgen, Hollenbeck, Johnson, & Jundt, 2005; Kozlowski & Bell, 2003; Mathieu, Maynard, Rapp, & Gilson, 2008; McGrath & Argote, 2001). That is, because the nature of the group changes over

time, the characteristics most relevant to success in that group may also change over time (Tett & Burnett, 2003; Tett & Guterman, 2000). Therefore, longitudinal studies may be required to reveal the dynamic relationships between individual differences and social status.

In summary, extant studies have limitations in revealing the complex effects of individual differences on social status. These studies have failed to explain the relative validity of the effects of individual differences in explaining social status. Moreover, scholars have not explored whether these effects will remain static or change as teams develop over time.

### **Purpose of the Study**

This study aims to explore and extend the current understanding of the relationship between individual differences and the emergence of social status in leaderless teams by utilizing social network methods. In the newly-formed leaderless group, no one in the team is assigned or conferred a formal authority to lead the team. All members have the same status within the team when the team is newly-formed. Then, emergence of social status occurs when certain persons occupy prestigious positions in team social networks while others remain in peripheral positions. Further, as certain individuals attain status, they invariably change the nature and structure of status in the group as a whole.

The primary research question is, how are individual differences related to social status in newly-formed leaderless teams over time? More specifically, this study examines the following two research questions: What does an integrative approach to individual differences tell us about (a) how multiple domains of individual differences are

related to social status of influence, and (b) whether effects of individual differences on social status remain static or change during the life cycle of social groups?

First, drawing from neo-socioanalytic theory (Roberts & Wood, 2006), social network theory (Brass, 1981, 1984), trait activation theory (Tett & Guterman, 2000), and the leader emergence literature (e.g., Côté et al., 2010; Judge et al., 2002; Judge, Piccolo, & Kosalka, 2009; Wolff et al., 2002; Lord et al., 1986), this study integrates multiple domains of individual differences in order to better understand the relationship between individual differences and social status in newly-formed leaderless small groups. Roberts and Wood (2006) discussed that few studies have incorporated multiple domains of individual differences in exploring the effects of individual differences. They argued that multiple domains of personality, e.g., abilities, personality traits and motivation, should be simultaneously examined to understand the broad categories of individual differences in explaining social status (Roberts & Wood, 2006). They further discussed that these various domains of individual differences are closely related but distinct (Roberts & Wood, 2006). Similarly DeRue et al. (2011) call for studies that integrate different theories across traits in explaining leadership phenomena (e.g., leader emergence, effectiveness, satisfaction to leader, etc.). They argued that scholars know that certain domains of individual differences are related to leadership outcomes but what we do not know is which domain of individual differences is more strongly related to leadership outcomes. While their studies mainly focused on the leadership effectiveness using meta-analysis, they proposed further research in other area of leadership phenomena (DeRue et al., 2011). Thus, this study aims to explore the integrative approach to individual



differences on social status and examine which domain of individual differences has more predictive power than others.

In order to fill this gap, this study will simultaneously integrate a broad array of individual differences including abilities (cognitive ability, emotional intelligence), personality traits (Big Five personality traits) and motives (motivation to lead) to clarify the effects of these multiple domains of individual differences on social status within social groups. These variables are chosen not only because they represent broad categories of individual differences but also because they have been demonstrated to be related to social status of people within social groups even though most of them have taken a static perspective in explaining social status.

Second, previous studies have not explored whether individual differences have different effects in predicting social status within social groups at different stages of social groups. This static point of view on the relationship between individual differences and social status has two implicit assumptions. First, it assumes that all domains of individual differences are activated at the same time and maintain their effects consistently across different situations (e.g., Tett & Burnett, 2003; Tett & Guterman, 2000). Second, it assumes that the social groups themselves do not change and are stagnant (Kozlowski & Bell, 2003; Kozlowski, Gully, Nason, & Smith, 1999). This study aims to demonstrate whether these assumptions are accurate or not. Team development theorists (e.g., Kozlowski & Bell, 2003; Kozlowski et al., 1999) have argued that social groups evolve and change continuously. Their studies suggest that the characteristics of teams during the early stages are different from those of teams during the later stages. Therefore, some elements of personality may be more relevant early on and some later on

depending on the norms, needs, and goals of the social groups. Similarly, some elements of individual differences are readily observable than others. For example, a person might be granted higher social status due to their physical attractiveness during the early stage of a relationship, but the social status may not be maintained if he/she has bad temperament that is observed by other members over time. Moreover, some individual differences may be perceived in a positive way during the early stage of group development but then be perceived in a negative way when members get to know each other better. For example, Paulhus (1998) found that narcissists had a positive impression on peers during the early stage of the relationship but a negative impression over time.

Trait activation theory offers an additional explanation for why this effect may occur (Tett & Burnett, 2003; Tett & Guterman, 2000). Tett and colleagues have proposed that individual traits may be activated when there are situational cues that are relevant to the focal traits (Tett & Burnett, 2003; Tett & Guterman, 2000). This implies that the function of the personality and environment may not be consistent across different stages of social groups (i.e., early stage vs. later stage) since different stages of social groups will give different situational cues to the members within the groups. Thus, during the early stage of social group development, the lack of relationships and interpersonal information among members may cue certain elements of individual characteristics to be activated, but these characteristics may no longer be activated as members accumulate interpersonal information and develop interpersonal relationships.

In summary, this study will examine whether the effects of multiple domains of individual differences will remain the same over the life cycle of social group

development. In so doing, this study uses neo-socioanalytic theory (Roberts & Wood, 2006), team development theory (e.g., e.g. Kozlowski & Bell, 2003; Kozlowski et al., 1999), and trait activation theory (Tett & Burnett, 2003; Tett & Guterman, 2000) to build the theoretical framework to explore the relationship between individual differences and social status. Based on these theoretical foundations, this study argues that various domains of individual differences should be taken into account to integrate theoretical perspectives in extant studies to provide a more comprehensive explanation of the phenomena of social status hierarchies. Moreover, this study argues that the effects of individual differences on social status will not be consistent across different stages of social group development. People who have higher social status in the early stage of team formation may lose their social status in the later stage of teams. On the other hand, those with lower social status during the early stage of social groups may gain social status as the group evolves, resulting in higher social status during the later stage of social groups.

### **Scope and Context of the Study**

The scope of this study is to investigate the relationship between individual differences and social status in *newly-formed leaderless small groups*. As specified in the next chapter, determining the scope of the study is important to explore social status within social groups because it can confine the boundary of the theory (Dubin, 1976). The topic of teams has gotten a lot of attention in academic inquiry over several decades since teams are one of the most widely utilized forms in modern organizations (Mathieu et al., 2008). In newly-formed leaderless teams, there are little or no interpersonal relationships among members because members do not have interpersonal knowledge of

each other. In addition, the tasks and the environment are novel and uncertain to the members of the teams. Therefore, this study will examine the role of individual differences on social status when there is little information and relationships among members and tasks (e.g., early stage of group formation), and consider whether these effects remain static or change during the life cycle of social groups.

The context of this study is the Korean Army Training Center. New soldiers will come to this institution to undergo a basic military training for 5 weeks. This study was conducted during the entire life cycle of the teams (i.e. Squads which are the basic units in the training center) from the foundation and the end. It is important to determine how much time will be required for teams to be stabilized because this study aims to explore whether there are different effects of individual differences on social status during the life cycle of the newly-formed teams. Because the required time may vary across types, sizes and the contexts of the teams, a series of discussions were conducted with informants (2 commanders, 2 platoon leaders, and 2 external team leaders) in the Korean Army Training Center to determine the different stage of groups. Based on the discussions, three time points were determined: at the end of the 1<sup>st</sup> week (Time 1), at the end of 3<sup>rd</sup> week (Time 2), and at the end of the 5<sup>th</sup> week (i.e., at the end of basic military training) (Time 3) . The time of measurements were balanced since, in the longitudinal study settings, it is recommended to balance the time of measurement to show the pattern of changes of outcome variables effectively (Hoffman, in press).

### **Outline of the Dissertation**

This study consists of five chapters and an appendix section. The first three chapters specify theoretical background, research model and hypotheses, and research

methods. In the first chapter, a brief overview of extant studies, the current gap in the previous studies, the research questions and purpose of the study were provided. In the second chapter, theoretical background will be discussed and hypotheses will be developed. In particular, the use of different terminologies among different field of study will be discussed, followed by how social status is expected to emerge in newly-formed leaderless teams. Finally, the research model of this study will be broadly discussed and hypotheses will be developed for this study. The third chapter will provide the research methods of this study, including the sample and procedure, the measurement of the variables, and the analytic procedure to test the hypotheses.

Chapters four and five will provide the results of the study and discussion. In chapter four, the findings of this study will be presented. If necessary, additional analyses will be presented and discussed. In chapter five, the summary of the findings and its theoretical and practical implications will be discussed. The limitations and the directions of future study will be described, followed by the conclusion of this study. Finally, in the appendices, the proposed consent form and the surveys which were used for this study will be provided.

## CHAPTER II

### THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

#### **Social Status: Definition, Scope and Importance**

Human beings are social creatures who live in social groups. Regardless of the type, size, and formality of the organization, there are always hierarchies of social status (Anderson et al., 2001; Hogan, 1991) because one of the fundamental motives of human beings is obtaining higher social status (Adler, 1930; Allport, 1937; Barkow, 1975; Hogan, 1983, 1991; Hogan & Hogan, 1991). However, people differ in their capacities to obtain higher social status, which lends support to the emergence of hierarchies of social status.

Social status is originally conceptualized from sociological and anthropological perspectives (e.g., Weber, 1978). Weber conceptualized social status as “an effective claim to social esteem in terms of positive or negative privileges” (Weber, 1978, p. 205). Weber (1978) distinguished social status from economic status by describing it as a positional and relational entity of social structure. In a similar vein, Sorokin (1927) discussed that status can be categorized into several forms such as economic, political and social. Drawing from previous studies on social status (e.g., Bourdieu, 1984; Weber, 1978), this study defines social status as a relative position of members within social groups.

The concept of social status is very broad and many aspects can contribute to explaining hierarchies of social status. For example, educational achievement and operational status may explain individuals’ social status within hierarchies of social groups (Anderson et al., 2001). Due to the broad nature of social status, previous studies

have suggested defining the boundary of the study (e.g., Anderson et al., 2001). When Anderson et al. (2001) explored the effects of Big Five personality traits on social status they conceptually distinguished their sample (fraternity and sorority group) from other social groups, referring in their study “face to face group social status” (p. 117). This study confines the context to newly-formed small groups. This context is similar to the face to face groups utilized in Anderson et al.’s (2001) study but different because there are no previously established hierarchies of social status.

Relative social status in social hierarchies is important because a variety of factors are related to the relative positions of members within social groups. People with high social status are perceived to possess more power than those in low social positions (e.g., Ibarra, 1993; Krackhardt, 1990) because of the increased dependency of people on lower social status to those on higher social status (Emerson, 1962). Those in high social status are also more likely to experience positive psychological functioning (e.g., Adler et al., 2000) because disadvantaged social status increases psychological distress (Kessler, 1979). In addition to psychological functioning, the general health outcomes are also related to social status. From the Whitehall studies<sup>1</sup>, a number of researchers have found that people in high social status tend to maintain good health status such as blood pressure (e.g., Carroll, Smith, Sheffield, Shipley, & Marmot, 1997; Hemingway et al., 1997; Singh-Manoux, Adler, & Marmot, 2003). They also can readily access valuable resources and information (e.g., Baldwin, Bedell, & Johnson, 1997; Ibarra, 1993). While there are many characteristics and benefits of social status based on the broad and different theoretical concepts, Anderson et al. (2001) discussed three common elements:

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<sup>1</sup> Whitehall studies (I & II) have examined the social determinants of health among British civil servants beginning in 1967.

attention, respect, and influence. Those with high social status tend to get more attention (Chance, 1967; Fiske, 1993), receive more respect (Barkow, 1975; Goldhamer & Shils, 1939), and exert more influence on group processes such as decision making (Bales, Strodtbeck, Mills, & Roseborough, 1951; Berger et al., 1972) than those with low social status in social groups.

### **Social Status, Social Network Centrality, and Leader Emergence**

As noted, many scholars from a variety of domains of scholarship have explored the role of individual attributes in explaining social status. Interestingly, they have used different terminologies to explain the phenomena of social status: social status, status, network centrality, and leader emergence<sup>2</sup>. Anderson et al. (2001), for instance, used the term “social status” while Klein et al. (2004) used the term “social network centrality.” Leadership studies have mostly used leader emergence since their main focus is the leadership process. Furthermore, there are studies that used these different terminologies interchangeably. For example, Harms, Roberts and Wood (2007) used the term “leadership emergence” and “social status” interchangeably. Similarly, Bingham et al. (in press) used the term “social status” even if they measured social status using the “social network centrality.”

The use of different terminology may largely depend on the theoretical underpinning, academic areas of researchers, and research questions. While the terminology may have different meanings dependent on the context and scope of the studies, the phenomena these different terminologies try to explain is very similar, if not identical, in the context of this study. In particular, since this confines the scope and

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<sup>2</sup> Some studies specify either informal leader emergence or formal leader emergence while other studies use leader emergence without specifying it.



context into newly-formed leaderless teams, these terminologies may not contain much difference in illustrating the phenomena (i.e., the phenomena in the context of newly-formed leaderless teams can be explained by either informal leader emergence or social network centrality or social status). Therefore, in this study, studies in social status, social network centrality, and leader emergence will be discussed in building theoretical arguments and developing hypotheses. It is beneficial because, in doing so, this study can bring literatures published in different field of studies (e.g., psychology, management, leadership, and sociology) together to explore the role of individual differences on social status.

Moreover, the term “social status of influence” will be used as the primary terminology in developing hypotheses. There are two reasons. First, the term social status is perceived as the most comprehensive way in which to integrate the different uses of terminologies across various fields of studies. And the “influence” is the most common characteristic across different terminologies: informal leader, social network centrality, and social status. For example Hollander (1961) discussed that informal leadership is a process of influence. Similarly, studies in social network centrality have discussed that people in the central positions exert more influence to the social groups (e.g., Brass, 1985; Ibarra & Andrews, 1993).

Second, this study will utilize advice network centrality to measure “social status of influence.” An advice social network is a type of social network commonly studied in the organizational literature (Baldwin et al., 1997; Klein et al., 2004). The advice network is composed of connections through which work-related advice is exchanged (Ibarra & Andrews, 1993; Sparrowe, Liden, Wayne, & Kraimer, 2001). For example,

people go to other people for work-related advice when they believe these people have expertise and perform better than them. Moreover, they go to other people who will not embarrass them because asking advice is showing their ignorance on the subject matters (Borgatti & Cross, 2003; Klein et al., 2004). Therefore, other members perceive those who are in the central positions of advice network to outperform and at the same time they feel comfortable to ask advice from them. Thus, scholars agree that the positions in the advice network (i.e., advice network centrality) are related to the influence because other members depend on the central members and information and supports flow from the central members to others (Sparrowe et al., 2001). Thus, previous studies have discussed that the advice network is appropriate to measure social status of influence because it indicates the structure of the influential relationships within social groups (e.g., Baldwin et al., 1997; Borgatti & Cross, 2003; Sparrowe et al., 2001).

### **Emergence of Social Status in Newly-Formed Teams**

Within newly-formed teams, social status cannot be simply claimed by the status holder but is conferred by other members of the social group (Anderson et al., 2001; Emerson, 1962; Kemper, 1984, 1991). Socioanalytic theory provides the basic framework explaining how social status is formed. Hogan (1983, 1991) suggested that social status is constructed through the interactions of group members. The interactions of people are framed through behaviors of members, and individual behaviors not only reflect individual characteristics but also are the function of interactions between the person and the environment (Lewin, 1935; Hogan, 1991; Hogan & Roberts, 2000). Among many situational contextual environments, Hogan and Roberts (2000) argued that other people

and their characteristics should be considered as important environmental factors in social settings.

In order to recognize certain social status to others, members should be able to observe and identify behaviors of other members (Hogan, 1983, 1991; Hogan & Holland, 2003). Members grant higher social status to a member when they believe that the focal member possesses appropriate behavioral attributes (Hogan, 1983, 1991). In addition to the quality of the behaviors, people also consider the perceived and expected performance and contribution of the focal member to the social group (Bunderson, 2003; Flynn, 2003; Fragale, 2006; Willer, 2009).

Since people consider multiple aspects of individual characteristics when they evaluate and grant other people social status within their groups, a variety of individual differences should be simultaneously taken into account. Based on the theoretical frame of socioanalytic theory (Hogan, 1983, 1991; Hogan & Blicke, 2013), Roberts and Wood (2006) suggested neo-socioanalytic theory of personality. They argued that multiple domains of individual differences such as abilities, personality traits, and motive should simultaneously be considered in explaining human personality, and that personality should be linked to an appropriate social context, such as social roles and status, to comprehensively examine the theory of personality.

However, the structure and hierarchies of social status within social groups are not static but continuously changing and evolving over time (Ilgen et al., 2005; Kozlowski & Bell, 2003; McGrath & Argote, 2001). Team development theorists have found that teams develop over time, and suggest that teams evolve through distinct phases (Kozlowski et al., 1999). They suggest that the nature of early stage and later

stage of social groups are different. In newly-formed small groups, there will be no or little social relationships during the early stage of social groups since participants do not have interpersonal knowledge of each other (Kozlowski et al., 1999). In this phase, members uncover their own information and at the same time seek information from others to learn about other members (DeRue & Morgeson, 2007; Gabarro, 1990; Kozlowski et al., 1999). In this phase, however, members may only be able to obtain limited information about each other. They are mainly dependent on the most observable and identifiable behaviors of other members when they evaluate and grant social status of other members. Over time, members develop and accumulate interpersonal knowledge through repeated interactions among team members. The social relationships will become more dynamic and complex during the later stage of social groups (DeRue & Morgeson, 2007; Kozlowski et al., 1999). As a result, the relationships between individual differences and social status within social groups should be different between early and later stages of social groups.

In addition, individual differences are likely to be activated differently at different stages of social groups. Trait activation theorist (e.g., Tett & Burnett, 2003; Tett & Guterman, 2000) propose that personality traits are activated by relevant situational cues. Tett and Guterman (2000) argue that traits will be activated when there are opportunities to express the relevant traits. They propose that linking traits and behaviors should take into account relevance of situations to the traits. Their findings show that traits do not show consistency across different scenarios (Tett & Guterman, 2000). Traits are not always activated but only activated when there are relevant situational cues. For example, openness to experience is likely to be activated when there

are new and novel situations but is less likely to be activated when the situation is familiar and routine.

Based on the theoretical framework by Tett and Guterman (2000), this study further suggests that these individual differences will need different periods of time to be fully activated and effectively observed and identified by others. Considering the different stages of social groups, some individual differences are likely to be activated in the early stage of social group formation, while others are more likely to be activated in the later stages. Even if individual differences are activated at the same time (i.e., in the early stage of social groups) some might be immediately and fully activated and observed by other members while others might need time to do so. For example, individual differences that were not observed during the early stage of social groups could be observed and identified by members during the later stage of social groups. These would then be activated and utilized at a later stage for members to evaluate and grant social status of other members. Moreover, some individual differences previously perceived positively or negatively by other members might diminish or disappear at a later stage due to the accumulated information and interpersonal relationships.

Taken together, this study proposes that the effects of individual differences on social status is not static but dynamic, due to combined effects of individual differences, the different nature of social groups between early and later stages, and different activations of individual differences. Through ongoing development of interpersonal relationships in newly formed small social groups, the hierarchies of social status are expected to be continuously reshaped and reformed. This implies that

the effects of the individual differences on social status of influence during the early stage of social groups may not be same with those during the later stage of social groups.

### **Individual Differences and Social Status of Influence**

Researchers investigating individual differences tend to take one of three approaches to understanding status attainment. Some have used the trait approach (e.g., Anderson et al., 2001; Judge et al., 2002; Klein et al., 2004), some have used motives (e.g., Chan & Drasgow, 2001; McClelland, 1975), and some have used abilities (Côté et al., 2010; Judge et al., 2004; Wolff et al., 2002). In very few cases researchers have employed multiple approaches (e.g. Harms et al., 2007). Consequently, we know very little about the combined effects of these constructs and their relative and incremental contributions to the social status of influence at the different stages of social groups.

In the following section, the hypotheses for this study will be developed. There are two parts of the hypotheses for each domain of individual differences. The first part of the hypotheses (H1a, H2a, H3a, H4a, H5a, H6a, H7a, and H7b) are about the overall relationships between individual differences and social status of influence. These hypotheses examine the relationships between individual differences and social status of influence based on the integrative approach. In doing so, this study can show the relative and incremental validity of each domain of individual differences on social status of influence. The second part of the hypotheses (H1b, H2b, H3b, H4b, H5b, H6b, H7c, and H7d) are about the changing effects of individual differences on social status of influences during the life cycle of teams.

## **Intelligence and Social Status**

In classic human capital theory, individuals with higher cognitive abilities are more likely to be productive and efficient (Schultz, 1959; Becker, 1964).

Originally studied to determine academic performance in education (Spearman, 1904), intelligence (cognitive mental ability) has also become one of the most widely studied constructs for predicting various outcomes in organizations (Schmidt & Hunter, 1998). It has been demonstrated to be a strong predictor of job performance (e.g., Gottfredson, 1997; O'Reilly & Chatman, 1994; Schmidt & Hunter, 1998; Schmidt, Ones, & Hunter, 1992, Wright, Kacmar, McMahan, & DeLeeuw, 1995) and this relationship is shown to become stronger with complex tasks (Judge et al., 2004; Schmidt & Hunter, 1998). Moreover, intelligence has been argued to be closely related to creativity (Guilford, 1950), lending support to the idea that intelligent people are able to develop creative solutions to accomplish goals and overcome barriers. In one study Pajares and Kranzler (1995) found that general mental ability has a strong effect on efficacy, which in turn can predict problem solving and a positive outlook. Schmidt and Hunter (2000) even went so far as to declare that “intelligence is the most important trait or construct in all of psychology, and the most ‘successful’ trait in applied psychology” (p. 4).

Intelligence is also one of the oldest theories of leader emergence, originating even before the formal study of leadership emerged during the late of 19<sup>th</sup> and early 20<sup>th</sup> century. Plato discussed in *The Republic* that intelligence is one of the foremost elements in making effective decisions (Plato & Jowett, 1901). Intelligence was also one of the most widely studied topics when the trait approach was dominant in

leadership studies during the first half of the 20<sup>th</sup> century (Stogdill, 1948; Mann, 1959). It is one of the few factors that have borne the test of time and shown the strongest relationship with leadership outcomes (Antonakis, 2011).

Due to the higher performance expectations of intelligent people, intelligence has been explored in the construction of social status, particularly in leadership studies. Many quantitative and qualitative review papers on leadership have emphasized the effects of intelligence on perceptions of leadership outcomes (Bass, 1990; House & Aditya, 1997; Mann, 1959; Stogdill, 1948). In their comprehensive review, Stogdill (1948) and Mann (1959) identified intelligence as a potentially important factor for leadership. Lord, Foti, and De Vader (1984) empirically demonstrated intelligence as the most promising predictor of leadership among 59 individual characteristics. In a similar vein, Lord et al. (1986) reinvestigated Mann's (1959) classic study using a meta-analytic approach and found that intelligence was the most highly correlated with leadership. However, not all papers support this perspective. For example, Fiedler (2002) argued that an individual's intellectual capability is not necessarily related to leadership performance. Nonetheless, the overwhelming preponderance of the data supports intelligence as an important antecedent of obtaining social status such as emergent leaders in teams. Thus, the following hypothesis is suggested.

*H1a. Intelligence is positively related to social status of influence in newly formed small groups.*

Intelligence is not easily observable (Vazire, 2010) and therefore an individual's intellectual ability may not be readily apparent to new relations. There have been studies that examine how accurately people can observe and evaluate



others' level of intelligence. In experimental settings, previous studies have found that people can evaluate others' level of intelligence to some degree through observing their behaviors and speaking styles (e.g., Borkenau & Liebler, 1995; Vazire, 2010). Therefore, other members may be able to distinguish who are more intelligent than others to some extent during the early stage and the effects of intelligence on social status may be partially reflected. However, the accuracy of perception may not be enough and may be potentially biased. Particularly in field settings, perceptions and evaluations might be biased due to other behavioral tendencies. For example, Paulhus and Morgan (1997) found that people who are shy tend to be less favorably evaluated by others than their actual intellectual ability during the early stage of the relationship because shyness hinders people from showing their intellectual activities. Other members are not able to accurately evaluate intellectual ability and the perception is likely to be biased. Then, the evaluations become more accurate during later stage of the relationships when intelligent people verify their level of intelligence by showing superior performance. This implies that, during the early stage of group formation, members will be able to recognize who is more intelligent than others to some degree, but that this will become clearer during the later stage of group development. When intelligent people outperform, readily understand complex tasks, and provide creative solutions to problems (Ree, Earles, & Teachout, 1994; Schmidt & Hunter, 2000) others may be able to distinguish those who are intelligent from those who are not. Therefore, it is expected that the effects of intelligence on social status will increase over time. The following hypothesis is proposed.

*H1b. The positive effect of intelligence on social status of influence will increase over time.*

### **Emotional Intelligence (EI) and Social Status**

Based on its theoretical root in social skills, originally proposed by Thorndike (1920) and Gardner's multiple intelligence (Gardner, 1985), EI was conceptualized as the ability to recognize own and others' emotional status, to regulate emotions and utilize emotions to accomplish goals (Salovey & Mayer, 1990; Mayer & Salovey, 1997).

Emotionally intelligent people are more likely to effectively evaluate the emotional status of themselves (Ashkanasy & Tse, 2000; Daus & Ashkanasy, 2005) and others and are better able to recognize the interest and goals of others (Côté et al., 2010; Daus & Ashkanasy, 2005). They are also able to manage and utilize their emotions in accomplishing their interests and goals (Côté et al., 2010; Daus & Ashkanasy, 2005).

Many previous studies have found positive and significant effects of emotional intelligence on organizational outcomes such as job satisfaction (Sy, Tram, O'Hara, 2006; Wong & Law, 2002) and performance (Côté & Miners, 2006; Sy et al., 2006; Wong & Law, 2002). In particular, research has found that there is positive effect of EI on emergent leadership (Côté et al., 2010) and social relationships (Lopes, Salovey, & Straus, 2003).

Even though many researchers have been passionate in exploring organizational phenomena by adopting EI, the theoretical and empirical validity of EI has been challenged by a number of critics (e.g., Locke, 2005). For example, Locke (2005) challenged the theoretical validity of EI, claiming that EI is not a part of intelligence and that the all-encompassing nature of EI does not provide a definite conception. In a similar

vein, it has been argued that there are numerous theoretical and methodological issues to be addressed for EI research to obtain validity in organizational research (Antonakis, 2003; Antonakis, Ashkanasy, & Dasborough, 2009). For example, Harms and Credé (2010) found that effect size of the relationship between transformational leadership and emotional intelligence decrease significantly when different sources of measure were utilized.

In spite of the ongoing debates, both advocates and critics generally agree that EI is an important concept to be further explored to explain dynamic processes and phenomena in organizational research (e.g., Ashkanasy & Daus, 2005; Antonakis et al., 2009). Efforts have been made by proponents of EI to validate the measure and refine the construct validity of EI (e.g., Côté et al., 2010; Law, Wong, & Song, 2004; Wong & Law, 2002). These efforts are reflected in recent studies that have used EI as valid construct (e.g., Baum & Bird, 2010; Dong, Seo, & Bartol, in press). This suggests that EI is a valid construct and an important factor for members to gain high social status (Côté et al., 2010; George, 2000; Lopes et al., 2003; Pescosolido, 2002). Thus, the following hypothesis is developed.

*H2a. Emotional intelligence is positively related to influential social status in newly formed small groups.*

Emotional intelligence is especially important in relationship construction in newly organized social groups. Due to the novel and uncertain contexts of newly-formed groups, people are likely to experience emotional and psychological insecurity. Under this circumstance, people will hesitate to actively communicate with others due to limited information regarding other members. Emotionally intelligent people are more adept at

maintaining positive and secure emotional status in conducting tasks even in contexts of radical change than those with lower emotional intelligence (Abraham, 1999; Wong & Law, 2002). Therefore they are more likely to be perceived as confident and viewed favorably by other members. They are also able to recognize their own feelings and those of others', and better able to communicate with others without hurting their feelings. Therefore, others may feel comfortable coming to communicate with emotionally intelligent people (e.g., Lopes et al., 2003).

Thus, emotionally intelligent members are expected to possess higher status during the early stage of social groups. The favorable social status of emotionally intelligent people is expected to be reinforced with the continuous and repeated interactions with other group members as the group matures. Emotionally intelligent people can provide useful guidelines to others under emotionally uncertain situations because they comprehend and account for the effects of emotional experiences of themselves and others. While, during the early stage of social groups, even emotionally intelligent people may hesitate to provide useful guidelines to other members, they are more likely to do so as members get to know and establish relationships with each other during the later stage of social groups. In so doing, emotionally intelligent people may expand positive ties with other members within nascent teams (Côté et al., 2010). Therefore, during the later stage of social groups, the social status of emotionally intelligent members will be enhanced through the expanded relationships. Therefore, the following is hypothesized.

*H2b. The positive effect of emotional intelligence on influential social status will increase over time.*

## **Big Five Personality Traits and Social Status**

The five-factor model of personality traits (i.e., Big-Five personality traits; Goldberg, 1993; Digman 1990) has been accepted as a valid categorization of phenotypic personality traits for application to organizational behavior and human resource management (e.g. Barrick & Mount, 1991, 1993; Judge et al., 2002). Big Five personality traits consist of extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience (Costa & McCrae, 1988; McCrae & Costa, 1999). Several studies in the social status and relevant areas (i.e., network centrality and informal leader emergence) have explored the role of Big Five personality traits. Klein et al. (2004) found that only neuroticism is related to advice network centrality. Anderson et al. (2001) found that extraversion and neuroticism are related to social status in face-to-face groups. Similarly, Judge et al. (2002) found that extraversion, openness to experience, and conscientiousness are positively and significantly related to leadership while neuroticism is negatively and significantly related to leader emergence. There are also other studies which provide evidence of the role of Big-Five personality traits on social status. For example, conscientiousness is consistently and significantly related to a broad array of organizational outcomes across most occupations (Barrick & Mount, 1991) including intrinsic and extrinsic career success (Judge, Higgins, Thoresen & Barrick, 1999). Extraverted individuals and those who are high on openness to experience are more likely to become effective during training (Barrick & Mount, 1991). Taken together, of the “Big Five,” this study will discuss extraversion, conscientiousness, neuroticism, and openness to experience and relationships with hierarchies of social status because the effects of these four traits have been demonstrated to have significant impacts on social status (e.g.

Anderson et al., 2001; Barrick & Mount, 1991, 1993; Judge et al., 2002; Klein et al., 2004).

### *Extraversion and Social Status*

Extraversion is an individual disposition that is characterized by the tendency to be energetic, sociable, expressive, outgoing and talkative (Barry & Stewart, 1997; Caspi, Roberts, & Shiner, 2005; Driskell, Goodwin, Salas, & O'Shea, 2006; DeYoung, Quilty, & Peterson, 2007; Judge et al., 2002). Scholars have discussed that extraverts tend to strive for obtaining prominent social status because they are eager to get social attention (Ashton, Lee, & Paunonen, 2002) and to be perceived as distinguished and excellent (Barrick, Stewart, & Piotrowski, 2002; Paulhus & John, 1998).

Recent studies have found that emergent leaders tend to be more active, lively and energetic than silent and disinterested (Gough, 1988; Hogan et al., 1994; Judge et al., 2002). Therefore, being an extravert has been seen as an important factor for a member to emerge as a leader in social groups (Harms et al., 2007; Hogan et al., 1994; Kickul & Neuman, 2000; Neubert & Taggar, 2004; Taggar, Hackew, & Saha, 1999). In the process of constructing social relationships, people are expected to perceive that extraverts possess abilities to perform well and contribute to their groups because they are active and energetic and tend to talk a lot. Thus, the following hypothesis is proposed.

*H3b. Extraversion is positively related to influential social status in newly formed small groups.*

During the early formation stage of social groups, peers should perceive the behavioral tendency of extraverts because extraversion is easily observable (Buss & Perry, 1992). During this phase, other members are expected to perceive and evaluate

behaviors of the extravert in a positive way. Extraverts are perceived to have the potential for superior performance because they are active and energetic. As a result, peer members are likely to grant higher social status to them (Anderson et al., 2001; Hogan et al., 1994; John & Srivastava, 1999; Judge et al., 2002). However, the initially favorable perception of extraverts may not be maintained over time. Through the repeated interactions over time, extraverts tend not to listen to others and not to readily accept others' opinions (e.g., Grant, Gino, & Hofmann, 2011; Hogan & Hogan, 2001; Judge et al., 2009). In certain cases, peers may consider overly expressive and dominant behaviors of extraverts to be annoying (Klein et al., 2004). For example, Klein et al. (2004) found that extraversion is negatively related to social network centrality. In addition, due to the higher expectations for extraverts, other members tend to be more conservative when they evaluate the performance of extraverts (Bendersky & Shah, 2013). Peers will react more unfavorably to extraverts when they think the performance of extraverts does not meet the initial expectations. Therefore, it is likely that initial positive appraisals of extraverts may not be held by other members over time which in turn results in loss of social status of extraverts (Bendersky & Shah, 2013). Taken together, the following hypothesis is suggested.

*H3b. The positive effect of extraversion on social status of influence will decrease over time.*

### ***Conscientiousness and Social Status***

Conscientiousness is a multi-faceted individual disposition that is characterized by the tendency to be organized, responsible, careful and persevering (Barrick & Mount, 1991; Barry & Stewart, 1997; Caspi et al., 2005; Driskell et al., 2006; DeYoung et al.,

2007; Judge et al., 2002). Conscientious people tend to be hardworking and achievement-oriented (Digman, 1990). Since conscientious individuals are more likely to engage in tasks more tenaciously and persistently (Denissen & Penke, 2008; Goldberg, 1990), they tend to accomplish good performance (Hurtz & Donovan, 2000). Peers will perceive that conscientious colleagues are efficacious and confident because of their consistent efforts and the resulting higher performance than those with lower conscientiousness. Due to the favorable perception by peers, conscientious people tend to influence group processes (e.g., Anderson, Spataro, & Flynn, 2008) and emerge as leaders in social groups (Driskell et al., 2006; Foti & Hauenstein, 2007; Judge et al., 2002). Thus, the following hypothesis is developed.

*H4a. Conscientiousness is positively related to social status of influence in newly formed small groups.*

During the early stage of a social group, conscientiousness is likely to be perceived in a positive way because conscientious individuals tend to be responsible and hardworking (Barrack & Mount, 1991; Digman, 1990). The initial positive effects of conscientiousness are expected to be strengthened when they show the higher performance during the later stage of social groups. While conscientiousness is positively related to a variety of outcomes across different organizations (Judge et al., 2002), many other studies have found the null or opposite results with regards to the relationship between conscientiousness and performance in certain situations, particularly during a short time period (e.g., Bunce & West, 1995; Hogan, Hogan, & Murtha, 1992; LePine, Colquitt, & Erez, 2000; Martocchio & Judge, 1997; Robertson, Baron, Gibbons, MacIver, & Nyfield, 2000). These studies suggest that the plausible reason of this null or negative



relationship may be because of the behavioral tendency of conscientious people (Yeo & Neal, 2004). Conscientious people tend to be careful and deliberate such that they require more time to obtain good results (Yeo & Neal, 2004). Thus, the effects of conscientiousness will be more salient among peers during the later stage of the social groups, since conscientious members are expected to gradually show high performance over time (Barrick & Mount, 1991; Hurtz & Donovan, 2000).

Taken together, the social status of conscientious people is likely to be positive to some extent due to their behavioral tendency (i.e., responsible and hardworking) during the early stage of social groups. The initial positive effects of conscientiousness on social status will be strengthened during the later stage of social groups when those who are conscientious can show their superior performance. Therefore, the following hypothesis is suggested.

*H4b. The positive effect of conscientiousness on social status of influence will increase over time.*

### ***Neuroticism and Social Status***

Neuroticism is a disposition characterized by anxiety, depression, and hostility (e.g., Costa & McCrae, 1992; Fetterman, Robinson, Ode, & Gordon, 2010; Jang, Livesley, Vernon, & Jackson, 1996; Keller, 1999; Lord et al., 1986; Smillie, Yeo, Furnham, & Jackson, 2006; Weiss, Bates, & Luciano, 2008). It has been demonstrated that neuroticism is associated with a variety of human behaviors and experiences, generally in a negative way (Barrick & Mount, 1991; Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007). Previous studies have found that neurotic individuals tend to experience negative mood and emotions (Watson, 2000; Watson & Clark, 1992) which, in turn, is

related to various negative outcomes such as a higher rate of divorce, lower subjective well-being, and increased physical and psychological illness (Roberts et al., 2007; Weiss et al., 2008).

It has also been demonstrated that neuroticism is negatively related to social status. For example, neuroticism is negatively related to objective social status such as educational and occupational accomplishment (Roberts et al., 2007). In addition to the objective aspects of social status, neuroticism is negatively related to self-rated subjective social status (Adler et al., 2000; Operario, Adler, & Williams, 2004). Because neurotic individuals are more likely to experience negative affect and emotion (Watson & Clark, 1992) they tend to view themselves in a generally negative way (Hankin, Lakdawalla, Carter, Abela, & Adams, 2007; Watson, Suls, & Haig, 2002). They also tend to evaluate their social status lower than others even if their objective accomplishments such as education and career status are not inferior to others (Alfonsi, Conway & Pushkar, 2011).

This self-perception of status of highly neurotic individuals is associated with lower self-esteem, and their behaviors may reflect this psychological status, which is directly disclosed in the proximal environment. They also tend to engage in more passive and obedient behavior (Gilbert, Pehl, & Allan, 1994). Due to their behavioral tendency, neurotic individuals are given lower performance expectations by others (Judge & Bono, 2001; Judge, Erez, Bono, & Thoresen, 2002). In this regard, peers tend to perceive that neurotic colleagues possess lower social status within their social groups (Hogan et al., 1994). As such, Klein et al. (2004) found that neuroticism is negatively related to the advice network centrality. Similarly Anderson et al. (2001) found the negative

relationship between neuroticism and social status in face to face group. Therefore, the following hypothesis is suggested.

*H5a. Neuroticism is negatively related to social status of influence in newly formed small groups.*

While it is generally agreed that neuroticism is negatively related to social status and relationship building, there will be differential effects of neuroticism on different stages (i.e., early vs. later) of social groups. Behavioral tendency of neurotic members are expected to be observed most obviously during the early stage of social groups due to limited information of the social groups and task environments. Even though most people may experience emotional and psychological instability during this phase, neurotic members are expected to experience more severe anxiety. However, they will be less anxious when they accumulate interpersonal relationships and get to be familiar with task environments (Church, Katigbak & del Prado, 2010). Church et al. (2010) found that neurotic behaviors are more salient under unfamiliar situation than under familiar situation. In addition, Bendersky and Shah (2013) argued that neurotic individuals may have opportunities to gain social status over time “because their group-task contributions surpass peers particularly low initial expectations” (p. 389). It has also been discussed that neurotic people tend to put in extra effort to prepare and contribute to group-task since they want to avoid being perceived incompetent (Smillie et al., 2006). Bendersky and Shah (2013) found that neurotics gained status and argued that even small contribution and performance of neurotics were surprising to others since their initial expectations for neurotics were so low. Therefore the initial negative effects of neurotic members may be diminished because neurotics will show less neurotic behaviors when

they get to be familiar with other members and task environments over time (Church et al., 2010), and their small contribution and performance may be perceived favorably by others (Bendersky & Shah, 2013). Taken together, the following hypothesis is developed.

*H5b. The negative effect of neuroticism on social status of influence will decrease over time.*

### ***Openness to Experience and Social Status***

Openness to experience is an individual disposition characterized by being curious, open-minded, and imaginative (Barrick & Mount, 1991; Costa & McCrae, 1992; Digman, 1990; Judge et al., 2002; McCrae, 1987). Those who are high on openness to experience are less risk averse and more willing to accept new experiences and newness which distinguish them from those who like more traditional and routine life (Costa & McCrae, 1992; McCrae, 1996; McCrae & Costa, 1997). Because those who are high on openness to experience tend to enjoy new experiences they are more likely to have a broader range of experiences than those who are low on openness to experience. They also tend to be readily adaptable to new environments and changes.

The continuous development of new ideas based on a variety of experiences has been found to be related to higher levels of creativity among people who are high on openness to experience (Baer & Oldham, 2006; Feist, 1998; McCrae, 1987) although the strength of this relationship might vary based on external circumstances such as time pressure (Andrews & Smith, 1996; Baer & Oldham, 2006; Burke & Witt, 2002). The creativeness and new ideas exhibited by individuals who are high on openness to experience enable them to challenge the status quo (Digman, 1990; John, 1990; McCrae & Costa, 1997). In addition, they are more likely to readily accept others' opinions and

thoughts even if they are different from their own thoughts (e.g., George & Zhou, 2001; Lauriola & Levin, 2001; McCrae, 1987). On the other hand, those who are low on openness to experiences like to settle into a routine and tend to stick to the status quo (Costa & McCrae, 1992) and will feel comfortable with familiar situations and conventional ways of doing things (George & Zhou, 2001).

Previous studies have examined the effects of openness to experience on a various outcomes at work and the results of these studies have been somewhat inconclusive. On the one hand, it has been found that openness to experience has a non-significant or small relationship with performance at work from meta-analytic studies (e.g., Barrick & Mount, 1991; Tett, Jackson, & Rothstein, 1991). Similarly, Anderson et al. (2001) found that openness to experience is not significantly related to social status in face to face groups. On the other hand, it has been found to be significantly related to learning proficiency (Barrick & Mount, 1991; Mount & Barrick, 1998). Similarly, in the leadership studies, it has been found that people who are high on openness to experience are likely to emerge as leaders (Judge et al., 2002). Researchers have argued that creativity, which is expected to be possessed by high openness to experience people, is an important factor for effective leaders (Judge et al., 2002; Sosik, Kahai, & Avolio, 1998). Thus, the following is hypothesized.

*H6a. Openness to experience is positively related to social status of influence in newly formed small groups.*

People on high openness to experience are likely to have high social status in the early stages of social group formation but the effects will diminish or disappear as the group develops. During the initial stage of the social group formation, people who are

high on openness to experience are more likely to be perceived favorably by other members due to their behavioral tendencies than those who are low in openness to experience. Their curious, broad-minded, and receptive behaviors may enable them to adapt more easily to new, uncertain, and ambiguous environments than those who are low on openness. From others members' point of view, those who are high on openness to experience adjust well to the new environment and are likely to be perceived to perform well and contribute to the social groups. These early observations by other members will put them in high social status during the early stage of social groups. However, as previous studies have found, the performance of those high on openness to experience may not correspond with the high expectations of other people (e.g., Barrick & Mount, 1991; Tett et al., 1991). Since performance is a significant factor when people grant social status, this initially favorable social status for those high on openness to experience may not be sustainable as relationships develop in social groups. Moreover, the distinctiveness of behaviors associated with openness to experience may diminish or disappear when members get familiar with each other and the task environments. Therefore, the following hypothesis is suggested.

*H6b. The positive effect of openness to experience on social status of influence will decrease over time.*

### ***Motivation to Lead and Social Status***

Motivation refers to the internal processes which estimate the direction, intensity, and persistence of human behavior (e.g., Kanfer, 1990). Although a large number of basic human motivations have been proposed (Murray, 1964), this study will focus primarily

on motivations associated with leadership and status attainment, in particular, motivation to lead.

The theoretical framework of motivation to lead (MTL) was conceptualized by Chan (1999) and Chan and Drasgow (2001). They defined MTL as “an individual differences construct that affects a leader's or leader-to-be's decisions to assume leadership training, roles, and responsibilities and that affect his or her intensity of effort at leading and persistence as a leader” (Chan & Drasgow, p. 482). The construct of MTL consists of three dimensions: affective and identity motivation to lead (AIMTL), social-normative MTL (SNMTL), and non-calculative MTL (NCMTL). AIMTL refers to the fact that some people just like to lead other people. SNMTL indicates that some people lead other people because they believe that they are responsible for leading others. NCMTL refers to the idea that some people lead others when they are not so calculative about the ratio of the cost and benefits of taking leadership roles.

Chan and Drasgow (2001) have differentiated MTL from previous discussions of motivation such as need for power, need for affiliation and need for achievement which have traditionally been conceptualized as unconscious motivations (e.g., McClelland, 1975, 1985; Miner, 1977, 1993; Stahl, 1986), as well as traditional concepts of the characteristics approach such as personality or traits theory of leadership (e.g., Stogdill, 1948). They argued that individuals have different levels of MTL and that levels of MTL tend to be stable over time, but that MTL can also be learned through experience (Chan & Drasgow, 2001). Chan and Drasgow (2001) examined the predictive value of MTL on behavioral leadership potential and found that two sub-dimensions of motivation to lead are particularly related to leadership potential rated by assessment centers, peers and

supervisors: AIMTL and NCMTL. Similar results were found by Amit, Lisak, Popper, and Gal (2007).

While previous studies have not discussed the role of MTL on social status, the two sub-dimensions of MTL are likely to be positively and significantly related to social relationships in nascent social groups since they are related to the psychologically proximal phenomena of social status: leadership potential. Thus, the following hypotheses are proposed.

*H7a. Affective/identity motivation to lead is positively related to social status of influence in newly formed small groups.*

*H7b. Non-calculative motivation to lead is positively related to social status of influence in newly formed small groups.*

Although these two dimensions of MTL may predict the social status of members within social groups, these two dimensions of MTL may not be observed by other members at the same time. Chan and Drasgow (2001) suggest that high MTL individuals actively assume and participate in the leadership roles because they like to lead and do not calculate the benefits and cost of taking leadership roles. During the early phase of social groups, other members perceive that those with higher MTL are knowledgeable and self-confident based on their behavioral tendencies and initiating efforts attributed to high AIMTL. On the contrary, the behaviors activated by NCMTL may require time to be observed and evaluated by other members. When the social groups evolve with repeated interactions among members, members will recognize those who take leadership roles even if assuming leadership roles is not beneficial. Therefore, AIMTL and NCMTL of



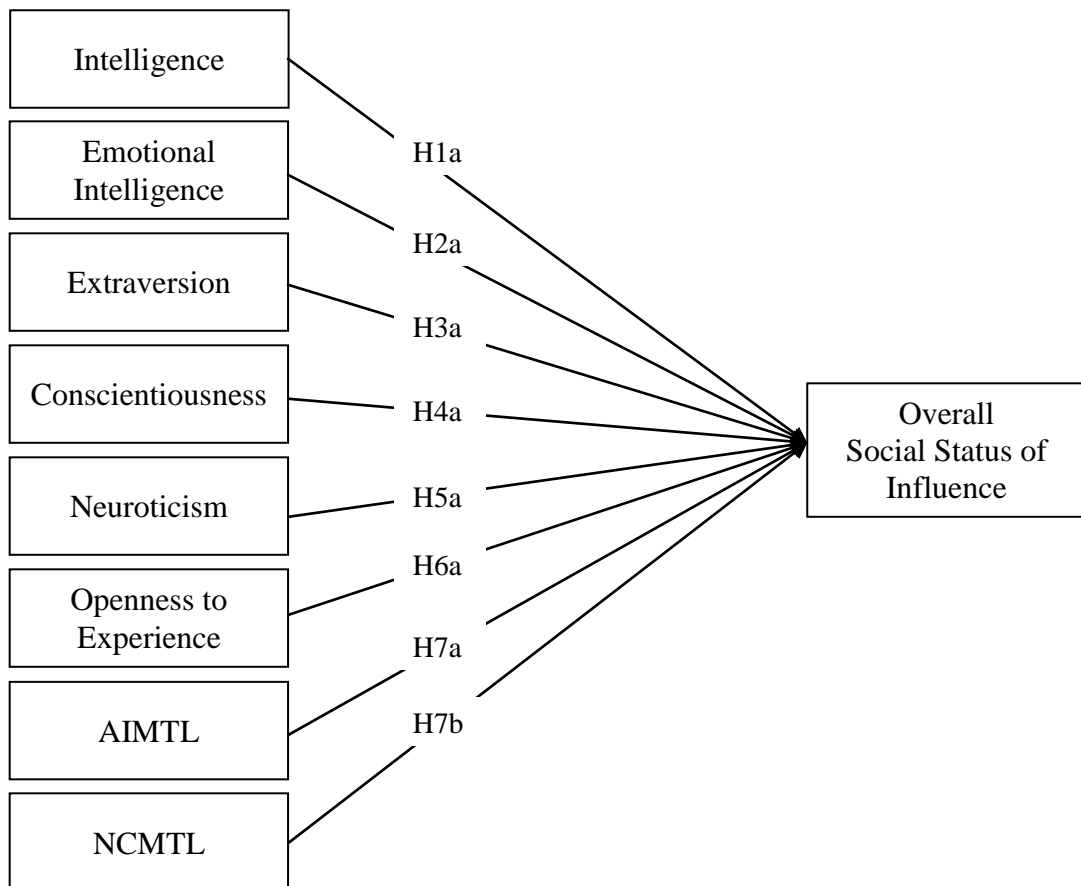
actors will be observed and identified by other members at different time points even if the actors may activate their MTL at the same time. This different timing of identification of AIMTL and NCMTL by other members in social groups will lead to different patterning of effects of AIMTL and NCMTL on social status over time. Taken together, the following hypotheses are proposed.

*H7c. The positive effect of affective/identity motivation to lead on social status of influence will decrease over time.*

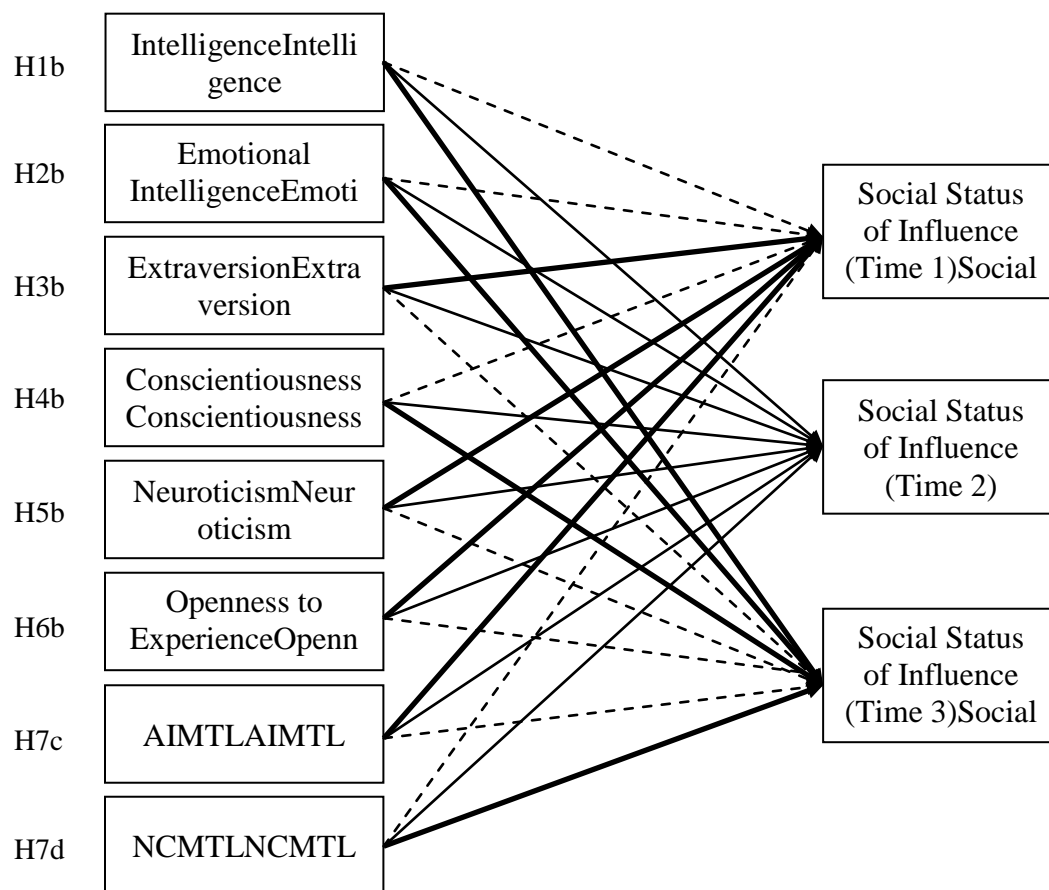
*H7d. The positive effect of non-calculative motivation to lead on social status of influence will increase over time.*

Figure 2.1 and 2.2 illustrate the conceptual models of this study and summarize the proposed hypotheses. In Figure 2.1, the overall relationships between multiple domains of individual differences and social status of influence are described. This model suggests that there is an incremental validity of each domain of individual differences on social status of influence. By testing this model, this study can explain the relative validity of each domain of individual differences. Figure 2.2 suggests that there are changing effects of individual differences on social status of influence across the two time periods. As noted, there are dotted paths and solid paths. Each domain of individual differences has one dotted path and one solid path. When there is a dotted path in Time 1 and a solid path in Time 2, the effect of this domain on social status will increase from Time 1 to Time 2. On the other hand, when there is a solid path in Time 1 and a solid path in Time 2, the effect of this domain on social status will decrease from Time 1 to Time 2.

**Figure 2.1. Overall Effects of Individual Differences on Social Status of Influence**



**Figure 2.2. Changing Effects of Individual Differences on Social Status of Influence.**



*Note. The thick lines have stronger relationships than the dotted lines The same thickness of the line does not imply equal predictive validity.*

## **Chapter III**

### **RESEARCH METHODS**

Scholars have long been interested in explaining who gains better social status and who becomes a leader across a various fields of studies. A number of studies have explored to answer this question, particularly focusing on individual differences. To date, however, many studies have emphasized a single domain of individual differences in explaining the phenomena (DeRue et al., 2011), and extant studies have had a tendency to believe that the phenomena are static. This study addresses these issues by developing and testing research models that fill these gaps in extant studies (see Figure 2.1 and Figure 2.2).

#### **Setting**

The setting for this study is leaderless teams in the Korean Army going through basic military training. Conducting this study in this setting is important for several reasons. First, studies in social and behavioral science are heavily dependent on western undergraduate students (Henrich, Heine, & Norenzayan, 2010; Gardner, Lowe, Moss, Mahoney, & Coglisier, 2010). The present research extends current understanding of the relationships between individual differences and social status by examining these issues in an Asian context. Second, in the military setting, the squad (i.e., team) is the basic combat unit. Thus, it is important to understand who will become more influential than others in the team since this understanding will be useful in selecting appropriate leaders. Finally, teams are one of the most widely used forms of modern organizations. Thus, the findings of this study will help provide implications to explain who will become more influential in team environments.

## Sample and Background

The sample for this study is new soldiers in the Korean Army Training Center enrolled to take their five-week basic military training. All men who are mentally and physically qualified are required to serve in the military for about 2 years as part of the compulsory service requirement in Korea. They are required to take a physical and mental examination when they become 18 years old. Then, they are enlisted to serve in the military when they pass the examination. They are normally conscripted in their early 20s but they can manage the time of service if they have a proper reason such as education, health condition, and so on. The majority of them serve in the army. Before new soldiers are deployed to their units, they take a basic military training for five weeks at training centers such as the Korean Army Training Center which is the fundamental training center for the Korean Army. The timing of the conscription is randomly determined based on the pool of people and by the plan of the Military Manpower Administration. Therefore, participants are likely to meet others for the first time when they go to the training center for the basic military training.

A squad (i.e., a team) is the smallest unit of the training which consists of 10-15 soldiers and teams are randomly assigned. All team members stay in the same team in the same barracks and they spend most of their time together during the entire basic military training. Since they stay in the same military barracks, their interaction will be continuous. They go through individual and team level basic military training. They undergo individual level training such as cross-order drill, bayonet skills, rifle training and individual combat. They also undergo team level training such as squad combat drill. Sometimes they are given random opportunities to participate in leader roles

during the training. The initial sample was one battalion which consists of 64 squads. The initial sample size was 884 participants in 64 teams with 13.8 mean sample size of the teams. In the study of social networks, an 80% response rate is the conventional standard for establishing the integrity of the network (Wasserman & Faust, 1994). Each of the 64 teams met this standard with 92% of response rate on average. After removing missing data, the final sample size was 814 participants in 64 teams with 12.7 mean sample size of the teams.

### **Procedures**

Since the context of this study is a military setting, soldiers might feel forced to participate in the research. Thus, they were guaranteed that they would not be given any disadvantages with regards to survey participation. Moreover, confidentiality of the information was emphasized by the commanders and researchers before the survey. The surveys were conducted at the mess hall and took 30 to 45 minutes on average to complete. During the survey administration, researchers were present and all other people including commanders were asked to be absent. To encourage participation, they were offered some gift cards through a lottery system prepared by the commanders and researchers.

Demographic information was acquired and an intelligence test was conducted at the beginning of the training. Participants were then asked to complete surveys four times: at the beginning of the 1<sup>st</sup> week, at the end of 1<sup>st</sup> week, at the end of 3<sup>rd</sup> week, and at the end of 5<sup>th</sup> week. All the independent variables such as emotional intelligence, Big Five personality traits and MTL were measured at the beginning of the 1<sup>st</sup> week. Then, the social status of team members was measured during two time

points (at the end of 1<sup>st</sup>, at the end of 3<sup>rd</sup> week, and at the end of 5<sup>th</sup> week). Since the original items of the scale were developed in English, all the questionnaires were translated through the standard double translation protocol (Brislin, 1980). Initially, two independent English-Korean translators translated English version of questionnaires into Korean. They compared the results of translation and modified until they reached agreement on the translation. Two other translators translated the Korean version of the questionnaires into English. Similarly, they compared the results of translation and modified until they reached agreement on the back-translation. Finally, three people (one from English-Korean translators, one from Korean-English back-translators, and the primary researcher) discussed the results of the translation and modified until they reached agreement on the translation.

## **Measure**

### **Social Status of Influence**

This study examined social status of influence by applying a peer-rating approach consistent with previous studies that have examined social status and hierarchies in social groups (e.g., Gould 2002). Previous studies commonly use a peer nomination technique to test social status because this approach is more robust to evaluate the focal phenomena (e.g., Brass 1984, 1985). This approach provides information of the relative position of each member within social groups. Particularly, centrality in social network is an important index which indicates the influence and status of each member within social group (Freeman, 1979; Wasserman & Faust 1994).

Following previous research (e.g., Brass, 1984; Klein et al., 2004; Bingham et al., in press), this study utilizes in-degree centrality of advice networks. A single item, which

was adopted from previous studies, was used to measure advice network of each team (e.g., Baldwin et al., 1997; Klein et al., 2004). First, each participant was given a list of team members, which is alphabetically listed. They are asked to respond to the following question for each team member: “Do you go to this person for task-related advice?” Then, in-degree centrality (network prestige) was calculated. In-degree centrality is the number of ties received by a focal person within the team (Freeman, 1979). This is one of the most widely used centrality measures in organizational studies (Klein et al., 2004; Bingham et al., in press). Because the teams vary in size, in-degree centrality was normalized by dividing by  $n-1$  ( $n$ : the number of team members in each team) to calculate and compare network centrality across teams of different sizes (Freeman, 1979; Wasserman & Faust, 1994). The resulting index of the normalized in-degree centrality indicates the percentage of nominations each member received from other members in the team. For example, if all other members nominated a person A, his in-degree centrality will be 100%.

### **Intelligence**

Cognitive mental ability was measured using the 110-item Korean Army General Intelligence Scale. This scale was developed and validated by a joint civilian-military research group in the Korean Army in 1991 and has been used in the Korean Army since that time.

### **Emotional Intelligence**

Emotional intelligence was measured using the 16-item Wong and Law EI Scale (WLEIS) (Wong & Law, 2002). This scale measures four dimensions of emotional abilities including (1) Self-Emotions Appraisal (SEA), (2) Others-Emotions Appraisal



(OEA), (3) Use of Emotion (UOE), and (4) Regulation of Emotion (ROE). Participants responded on 5-point Likert type questions (1: Strongly disagree, 5: Strongly agree). A sample item for SEA is, “I have a good sense of why I have certain feelings most of the time.” A sample item for OEA is, “I always know my colleagues’ emotions from their behavior.” A sample item for UOE is, “I always set goals for myself and then try my best to achieve them.” A sample item for ROE is, “I am able to control my temper so that I can handle difficulties rationally.” The factor structure of the measure was validated by Law et al. (2004). The results of a confirmatory factor analysis and the higher order model showed good model fit ( $\chi^2=244.23$ ,  $df=100$ ,  $CFI=.96$ ,  $TLI=.96$ ,  $RMSEA=.04$ ,  $SRMR=.04$ ; Hu & Bentler, 1999). The overall alpha reliability coefficient for EI was .83.

### **Big Five Personality Traits**

Big Five personality traits were measured using BFI-K which was originally developed by John and Srivastava (1999) and was validated in Korea (Kim et al., 2010). Participants responded 5-point Likert type questions (1: Strongly disagree, 5: Strongly agree). A sample item for extraversion is, “I see myself as someone who is talkative.” A sample item for conscientiousness is, “I see myself as someone who does things carefully and completely.” A sample item for neuroticism is, “I see myself as someone who is depressed, blue.” The alpha reliability coefficients were .82 for extraversion, .72 for conscientiousness, .74 for neuroticism, and .81 for openness to experience.

### **Motivation to Lead**

Motivation to lead was measured adopting MTL scale developed by Chan and Drasgow (2001). Each dimension of MTL was measured by 9 items. Participants

responded 5-point Likert type questions (1: Strongly disagree, 5: Strongly agree). A sample item for AIMTL is, “Most of the time, I prefer being a leader than a follower when working in a group.” A sample item for NCMTL is, “I would only agree to be a group leader if I know I can benefit from that role. (R)” The results of CFA for AIMTL showed good model fit ( $\chi^2=95.04$ ,  $df=27$ ,  $CFI=.95$ ,  $TLI=.93$ ,  $RMSEA=.05$ ,  $SRMR=.04$ ; Hu & Bentler, 1999). The results of CFA for NCMTL also showed acceptable model fit ( $\chi^2=80.58$ ,  $df=12$ ,  $CFI=.94$ ,  $TLI=.89$ ,  $RMSEA=.08$ ,  $SRMR=.04$ ; Hu & Bentler, 1999). The alpha reliability coefficients were .84 for AIMTL and .78 for NCMTL.

### **Control Variables**

This study controlled for several variables which potentially could be alternative explanations of emergent social status. Based on previous studies, this study controlled for age, education (e.g., Klein et al., 2004), and previous leadership experience (e.g., Kolb, 1997), as these variables have been found to be related to developing social relationships in teams. In addition, agreeableness of Big Five personality traits, which was not included as a hypothesized predictor of status in this study, was controlled to verify that agreeableness is not related to social status, consistent with previous studies (e.g., Judge et al., 2002). The alpha reliability coefficient was .61 for agreeableness.

### **Analytic Procedures**

Before examining the proposed hypotheses, the demographic information, such as age, education, and leadership experience were analyzed. The descriptive statistics of variables used in the study were also examined. Multi-level analysis will be used to test the hypotheses. In the Multi-level analysis, level 1 represented time, level 2 represented individuals within groups, and level 3 represented groups. First,

using Multilevel Linear Modeling (MLM) (Hoffman, in press), this study examined the general relationships between each individual difference and overall social status. Several steps of analysis were adopted. First, the unconditional model analysis was conducted. This process provides the baseline model for the data analysis. Second, each variable was entered into the model separately in order to determine the relative contribution of each domain of individual differences in explaining social status. Third, all the variables were entered into the model simultaneously to examine if each variable holds significance above and beyond other domains of individual differences. In doing so, the incremental validities of individual difference on social status were identified. Finally, the interaction effects between individual differences and time were tested to examine the hypotheses of changing effects of individual differences on social status of influence over the life cycle of the social groups. When the interaction effects are positively significant, the effects of individual differences increase over time. When the interaction effects are negatively significant, the effects of individual differences decrease over time. When the interaction effects are not significant, the effects of individual differences on social status of influence do not change over time.

The violation of the independence assumption is a problem when the study uses the social network method because observations obtained through the social network method are not independent (Borgatti, 2004). MLM enables one to test the relationships between variables when samples are nested within a team. Since the sample of this study is nested in teams, these methods can control for the nested structure of data and avoid misrepresenting the within-team effects (Klein, Dansereau,

& Hall, 1994). Moreover, since all the independent variables are at individual level and this study is interested in predicting within-team variability, all predictor variables were group-mean-centered (Hofmann & Gavin, 1998).

Finally, since this study used variables that are potentially correlated, there might be an issue of multicollinearity. Multicollinearity occurs when predictors in a regression model are highly related, which in turn creates confounding effects. It occurs more often when the sample size of the study is small. Multicollinearity is problematic since it is expected to inflate standard errors, reduce the stability of parameter estimation and reduce power to estimate effects (Kreft & de Leeuw, 1998). Previous studies have found that the variables used in this study have similar effect sizes with social status (e.g., Côté et al., 2010; Judge et al., 2004; Judge et al., 2002). Moreover scholars have discussed that these multiple domains of individual differences are potentially related (DuRue et al., 2011; Roberts & Wood, 2006).

Even though multicollinearity is problematic for estimating individual parameters, in a way, it is helpful for this study. By selecting variables in a stepwise fashion, multicollinearity can make predictors compete and distinguish more important variables than others (Harrell, 2001). Nonetheless, a couple of techniques were adopted in order to handle the potential problem of multicollinearity. First, this study used global statistics (e.g., AIC: Akaike Information Criterion, BIC: Bayesian Information Criterion) because these global statistics are not influenced by individual parameters (Burnham & Anderson, 2002; Cohen, Cohen, West, & Aiken, 2003). Second, previous studies have suggested that if the correlation between variables does not exceed 0.5, there is little effect of multicollinearity (e.g., Cohen et al., 2003). Therefore,

independent variables with correlations higher than 0.5 were analyzed cautiously. In this study, extraversion and AIMTL were correlated higher than .5 (see Table 4.1 in Chapter 4). The most widely used method to determine whether there are issues of multicollinearity is examining variance inflation factor (VIF) (Neter, Wasserman, & Kutner, 1983). A series of tests were conducted to examine VIF in the study and all of the VIF were smaller than 3 which is the suggested cutoff point for determining whether or not multicollinearity is a potential problem (Neter et al., 1983). Therefore, there is no severe issue of multicollinearity in this study.

## CHAPTER IV

### RESULTS

Table 4.1 shows the descriptive statistics and correlations among the variables in the study. Average age of the sample was 21.22 years old ( $SD=1.15$ ). 35% of the participants had previous leadership experience. The most frequent example of previous leadership experience was student organization officer roles. About 18% of the participants had high school diplomas. 35% of the participants graduated from or were students of junior colleges. 47% of the participants graduated from or were students of universities. Average IQ was 98.99 ( $SD=17.98$ ).

Since social status was positively skewed, it was log-transformed using natural logarithm. The average social status (log-transformed) was 3.77 ( $SD=.55$ ;  $M=39.5$ ,  $SD=23.5$  in the original scale) for time 1, 3.58 ( $SD=.55$ ;  $M=31.4$ ,  $SD=22.9$  in the original scale) for time 2, and 3.25 ( $SD=.68$ ;  $M=22.5$ ,  $SD=22.5$  in the original scale) for time 3.

Age ( $r=.30, .32, .32, p<.01$  respectively) and previous leadership experience ( $r=.27, .26, .25, p<.01$  respectively) were positively related to social status. Intelligence ( $r=.24, .28, .22, p<.01$  respectively) and EI ( $r=.26, .27, .25, p<.01$  respectively) were positively related to social status. Extraversion ( $r=.21, .25, .20, p<.01$  respectively), conscientiousness ( $r=.23, .20, .21, p<.01$  respectively), and openness to experience ( $r=.16, .21, .17, p<.01$  respectively) were positively related to social status, while neuroticism ( $r=-.15, -.20, -.17, p<.01$  respectively) was negatively related to social status. Both AIMTL ( $r=.21, .25, .24, p<.01$  respectively) and NCMTL ( $r=.14, .17, .15, p<.01$  respectively) were positively related to social status.

**Table 4.1. Descriptive Statistics and Correlations**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Age	-															
2. Education 1	-.16**	-														
3. Education 2	.32**	-.69**	-													
4. Leadership Experience	.13**	-.12**	.17**	-												
5. IQ	.16**	-.21**	.41**	.19**	-											
6. EI	.11**	-.08*	.14**	.22**	.14**	-										
7. Extraversion	.03	-.02	.03	.29**	.05	.31**	-									
8. Agreeableness	.05	-.07	.09**	.06	.03	.23**	-.01	-								
9. Conscientiousness	.14**	-.07*	.09**	.23**	.06	.43**	.30**	.20**	-							
10. Neuroticism	-.12**	.11**	-.12**	-.17**	-.08*	-.36**	-.39**	-.18**	-.41**	-						
11. Openness	.19**	-.10**	.21**	.26**	.24**	.36**	.29**	.03	.24**	-.12**	-					
12. AIMTL	.08*	-.03	.08*	.36**	.06	.28**	.58**	-.00	.40**	-.30**	.30**	-				
13. NCMTL	.06	-.06	.04	.12**	-.03	.17**	.18**	.26**	.28**	-.31**	.05	.27**	-			
14. Social Status 1	.30**	-.10**	.19**	.27**	.24**	.26**	.21**	.09*	.23**	-.15**	.16**	.21**	.14**	-		
15. Social Status 2	.32**	-.13**	.21**	.26**	.28**	.27**	.25**	.11**	.20**	-.20**	.21**	.25**	.17**	.67**	-	
16. Social Status 3	.32**	-.10**	.19**	.25**	.22**	.25**	.20**	.07*	.21**	-.17**	.17**	.24**	.15**	.66**	.78**	-
Means	21.22	0.35	0.46	0.37	98.99	3.52	3.09	3.45	3.13	3.18	3.23	2.91	3.31	3.77	3.58	3.25
STD	1.15	0.48	0.50	0.49	17.98	0.48	0.67	0.46	0.56	0.56	0.63	0.66	0.61	0.55	0.55	0.68

*note.* \*  $p < .05$ , \*\*  $p < .01$ , 814 members in 64 teams, Education Dummy: Reference: High School Diploma, 1: Junior College, 2: University

By convention, the first analysis step of the multilevel model is to explore the unconditional model. The unconditional model is basically the baseline model which shows the changing pattern of the variable (social status of influence) without considering predictor variables. The multilevel model analyses were conducted using SAS 9.2., using the PROC Mixed command and specifying an unstructured covariance matrix. Since the sample for this study is members nested in team in the longitudinal setting a 3-level analysis was conducted. The first step for unconditional model is to analyze the empty means model (i.e., without slope). Table 4.2 shows the results of empty multi-level linear modeling for social status of influence (i.e., advice network centrality).

Based on the results of the empty means model analysis, the proportion of variance at each model and intraclass correlation coefficients (ICC(1)s) were calculated to test the degree of dependency in outcome variable (social status) at level 1 (time), level 2 (individuals) and level 3 (groups). The proportions of variance were .44 for level 1, .56 for level 2, .00 for level 3. The initial examination of the ICC(1)s showed high level-2  $ICC(1) = .56$  but negligible level-3  $ICC(1) = .00$  as the level-3 (group level) variance component goes to 0. It indicates that there was significant person dependency due to constant mean differences over time but there was no or negligible dependency due to group membership. Although the ICC(1) for level 3 was zero, this study tested the hypotheses using 3-level modeling instead of 2-level because inflated Type I error may occur due to potential dependency at 3-level (cf. Hoffman, in press; Kreft & De Leeuw, 1998). Besides, one of the information criteria ( $\Delta BIC=7.8$ ) shows that the 3-level model is better than the 2-level model. Therefore, the 3-level model was adopted to analyze the hypothesized model.



**Table 4.2. The Result of Empty Model Analyses of Social Status of Influence**

Effect	Model 1		Model 2	
	Est.	SE	Est.	SE
Intercept	3.53**	.02	3.53**	.02
<b><i>Covariance Parameters</i></b>				
	Est.	SE	Est.	SE
Intercept (Level 3)	-	-	.00	.
Intercept (Level 2)	.22**	.01	.22**	.01
Residual	.18**	.01	.18**	.01
<b><i>Fit Statistics</i></b>				
-2 LL	4215.3		4215.3	
AIC	4221.3		4221.3	
BIC	4235.6		4227.8	

*note.* \*  $p < .05$ , \*\*  $p < .01$ , 814 members in 64 teams

To determine the final baseline model (i.e., final unconditional model), first, the linear time effect was entered to the model. Time is coded 0 for Time 1, 1 for Time 2, and 2 for Time 3 and centered at Time 1. Therefore, the intercept in Table 4.3 indicates the grand mean of the social status at Time 1. The linear time effect was significant ( $\gamma = -.26$ ,  $p < .01$ ), which indicates that social status decreases over time. Then random linear time effect was entered to level-2 in the model. In order to determine the goodness of the models, the difference of the -2 log-likelihood (-2 $\Delta$ LL) was compared. The log-likelihood difference test was significant (-2 $\Delta$ LL=126.9,  $p < .01$ ), which indicates each participant has its own slope. Then, the quadratic fixed time effect was entered to the model which was also significant ( $\gamma = -.06$ ,  $p < .01$ ), which indicates the rate of changes accelerated over time. Therefore, the final baseline model is the fixed quadratic, random intercept for level 3, and random linear slope for level 2.

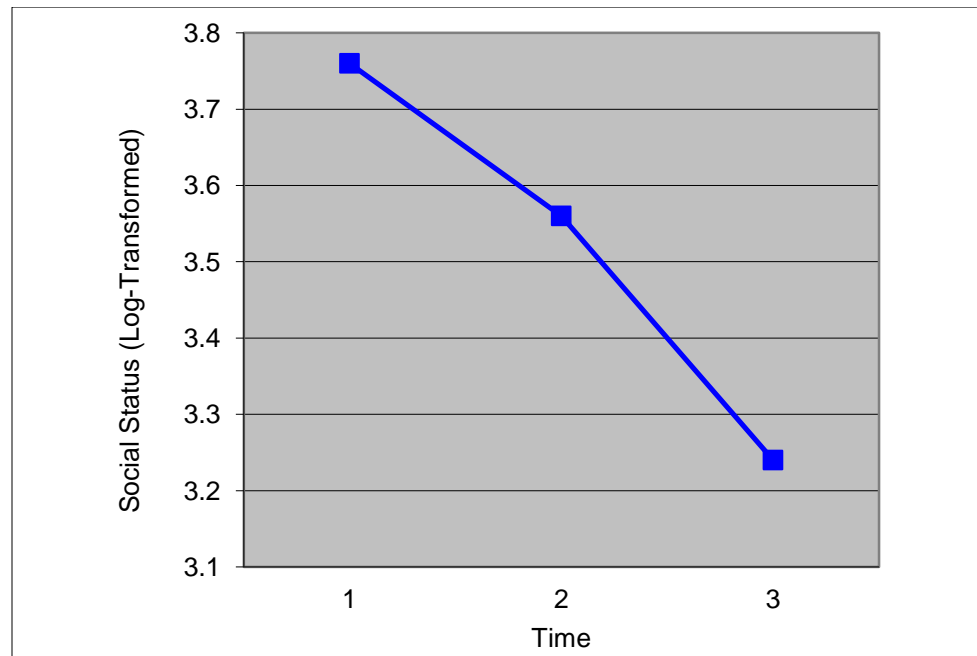
**Table 4.3. The Result of Baseline Model Analyses for Social Status of Influence**

Effect	Model 3		Model 4		Model 5	
	Est.	SE	Est.	SE	Est.	SE
Intercept	3.79**	.02	3.79**	.02	3.77**	.02
Time	-.26**	.01	-.26**	.01	-.14**	.03
Time^2					-.06**	.01
<i>Covariance Parameters</i>						
Parameters	Est.	SE	Est.	SE	Est.	SE
Intercept (Level 3)	.00	.	.00	.	.00	.
Intercept (Level 2)	.25**	.01	.20**	.01	.20**	.01
Intercept-Linear (Level 2)			.02**	.01	.01**	.01
Linear (Level 2)			.03**	.00	.03**	.00
Residual	.11**	.00	.09**	.00	.08**	.00
<i>Fit Statistics</i>						
-2 LL	3393.3		3266.4		3239.8	
AIC	3401.3		3278.4		3253.8	
BIC	3409.9		3291.4		3268.9	
-2ΔLL			126.9		153.5	
ΔAIC			122.9		147.5	
ΔBIC			118.5		141.0	

note. \*  $p < .05$ , \*\*  $p < .01$ , 814 members in 64 teams

The final baseline model (unconditional model) indicates that the mean level of social status of influence was 3.77 (natural log-transformed) at Time 1, it decreases by -.14 (i.e., fixed time effect) and the rate of decrease accelerates by -.12 (coefficients\*2) over time (i.e., quadratic time effect). In addition, each member has different level of nominations received (i.e., random intercept) and different level in the linear rate of change (i.e., random time effect).

**Figure 4.1. Changing Pattern of Mean Social Status over Time (Baseline Model)**



This finding indicates that members tend to approach more people for advice during the early stages of social groups and then approach fewer people for advice during the later stages. One plausible reason is that it is likely that people may not have clear idea about who has good-quality advice or who are willing to be helpful due to the limited interpersonal information during the early stage of social group but they

eventually recognize and distinguish those with good and quality personality from those not. A more in depth discussion of this issue will follow in the next chapter. Figure 4.1 depicts the changing pattern of mean level social status over time.

There are two hypotheses for each variable. The first hypotheses for each variable (H1a, H2a, H3a, H4a, H5a, H6a, H7a, H7b) postulate the initial relationships between the predictor and status outcome. The results of the analyses to test these hypotheses are summarized in Table 4.4. First, the control variables were entered into the model (see Model 6). Age ( $\gamma=.13, p<.01$ ) and previous leadership experience ( $\gamma=.12, p<.01$ ) were significantly and positively related to social status of influence. These effects hold significance in the full model (see Model 15). Moreover agreeableness was significantly related to social status of influence ( $\gamma=.08, p<.05$ ). But the effect of agreeableness was not significant in the full model. While agreeableness was significantly related to social status of influence, it is least related with social status of influence, which is consistent with previous studies (e.g., Judge et al., 2002).

Hypothesis 1a proposed that there would be a positive relationship between intelligence and social status of influence. The effect of intelligence on social status of influence was significant ( $\gamma=.01, p<.01$ , see Model 7). A person with a high level of intelligence is expected to possess high social status of influence within social groups. This effect held significance in the full model ( $\gamma=.01, p<.01$ , see Model 15), which supports Hypothesis 1a.

Hypothesis 2a suggested that there would be a positive relationship between EI and social status of influence. The effect of EI on social status of influence was

significant ( $\gamma=.24, p<.01$ , see Model 8). Therefore, individuals high on EI are expected to gain high social status of influence within social groups. This effect held significance in the full model ( $\gamma=.19, p<.01$ , see Model 15), which supports Hypothesis 2a.

Hypothesis 3a predicted that there would be positive relationship between extraversion and social status of influence. The effects of extraversion on social status of influence was significant ( $\gamma=.15, p<.01$ , see Model 9). Therefore, strong extraverts are expected to move to higher social status of influence within social groups. This effect held significance in the full model ( $\gamma=.09, p<.01$ , see Model 15), thus supports Hypothesis 3a.

Hypothesis 4a predicted that there would be a positive relationship between conscientiousness and social status of influence. The effects of conscientiousness on social status of influence was significant ( $\gamma=.15, p<.01$ , see Model 10). People high on conscientiousness are expected to obtain high social status of influence within social groups. However, this effect did not hold significance in the full model ( $\gamma=.04, ns$ , see Model 15), which partially supports Hypothesis 4a.

Hypothesis 5a suggested that there would be a negative relationship between neuroticism and social status of influence. The effects of neuroticism on social status of influence was significant ( $\gamma=-.10, p<.01$ , see Model 11). A person with a high level of neuroticism is expected to gain high social status of influence within social groups. However, this effect did not hold significance in the full model ( $\gamma=.03, ns$ , see Model 15), which partially supports Hypothesis 5a.

**Table 4.4. MLM Results for Main Effects**

Effect	Model 6		Model 7		Model 8		Model 9		Model 10	
	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE
Intercept	3.70**	.04	3.75**	.04	3.73**	.04	3.70**	.04	3.70**	.04
Time	-.13**	.03	-.13**	.03	-.14**	.03	-.13**	.03	-.13**	.03
Time^2	-.06**	.01	-.06**	.01	-.06**	.01	-.06**	.01	-.06**	.01
Age	.13**	.02	.13**	.01	.12**	.01	.13**	.01	.12**	.02
Education 1	.04	.04	.01	.04	.03	.04	.04	.04	.04	.04
Education 2	.12**	.04	.03	.05	.10*	.04	.13**	.04	.12**	.04
Leader	.26**	.03	.24**	.03	.21**	.03	.21**	.03	.24**	.03
Agreeableness	.08*	.04	.08*	.03	.01	.04	.08*	.03	.04	.04
Intelligence			.01**	.00						
EI					.24**	.04				
Extraversion							.15**	.02		
Conscientiousness									.15**	.03
Fit Statistics										
-2 LL	3003.9		2954.80		2818.80		2966.30		2980.60	
AIC	3037.9		2980.80		2844.80		2992.30		3006.60	
BIC	3053.8		3008.90		2872.80		3020.30		3034.70	

*note.* \*  $p < .05$ , \*\*  $p < .01$ , 814 members in 64 teams, Education Dummy: Reference: High School Diploma, 1: Junior College, 2: University

**Table 4.4. MLM Results for Main Effects (Continued)**

Effect	Model 11		Model 12		Model 13		Model 14		Model 15	
	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE
Intercept	3.70**	.04	3.71**	.04	3.70**	.04	3.69**	.04	3.76**	.04
Time	-.13**	.03	-.13**	.03	-.13**	.03	-.13**	.03	-.14**	.03
Time^2	-.06**	.01	-.06**	.01	-.06**	.01	-.06**	.01	-.06**	.01
Age	.13**	.02	.13**	.02	.13**	.01	.13**	.02	.12**	.01
Education 1	.05	.04	.03	.04	.04	.04	.05	.04	.02	.04
Education 2	.12**	.04	.11*	.04	.12**	.04	.13**	.04	.04	.05
Leader	.25**	.03	.25**	.04	.21**	.04	.26**	.03	.13**	.04
Agreeableness	.06	.04	.08*	.04	.08*	.03	.04	.04	.004	.04
Intelligence									.01**	.00
EI									.19**	.04
Extraversion									.09**	.03
Conscientiousness									.04	.03
Neuroticism	-.10**	.03							.03	.03
Openness			.06*	.03					-.04	.03
AIMTL					.13**	.03			.04	.03
NCMTL							.11**	.03	.08**	.03
Fit Statistics										
-2 LL	2991.50		2998.90		2973.00		2983.00		2734.40	
AIC	3017.50		3024.90		2999.00		3009.00		2774.40	
BIC	3045.60		3053.00		3027.10		3037.00		2817.60	

*note.* \*  $p < .05$ , \*\*  $p < .01$ , 814 members in 64 teams, Education Dummy: Reference: High School Diploma, 1: Junior College, 2: University

Hypothesis 6a proposed that there would be a positive relationship between openness to experience and social status of influence. The effects of openness to experience on social status of influence was significant ( $\gamma=.06, p<.05$ , see Model 12). Consequently, individuals with a high level of openness to experience are expected to move to high social status of influence within social groups. However, this effect did not hold significance in the full model ( $\gamma=-.04, ns$ , see Model 15), thus partially supports Hypothesis 6a.

Hypothesis 7a suggested that there would be a positive relationship between AIMTL and social status of influence. The effects of AIMTL on social status of influence was significant ( $\gamma=.13, p<.01$ , see Model 13). Thus, people high on AIMTL are expected to possess high social status of influence within social groups. This effect did not hold significance in the full model ( $\gamma=.04, ns$ , see Model 15), thus partially supports Hypothesis 7a.

Hypothesis 7b predicted that there would be a positive relationship between NCMTL and social status of influence. The effects of NCMTL on social status of influence was significant ( $\gamma=.11, p<.01$ , see Model 14). Therefore, members with a high level of NCMTL are expected to move to high social status of influence within social groups. This effect held significance in the full model ( $\gamma=.08, p<.01$ , see Model 15), thus supports Hypothesis 7b.

The relative validity of each variable can be identified by comparing the models. Global fit indices (e.g., AIC, BIC) were used to determine the relative importance of each predictor (Hoffman, in press). In Table 4.5, the differences of the AIC and BIC ( $\Delta AIC$ ,



$\Delta$ BIC) between the model with control variables and the model with each predictor were provided. The model with EI has the biggest  $\Delta$ AIC and  $\Delta$ BIC, followed by intelligence and extraversion. Therefore, EI has the largest relative validity beyond the control variables in predicting social status of influence, followed by intelligence and extraversion. Openness to Experience has the smallest relative validity in explaining social status of influence.

**Table 4.5. Analyses of Relative Validity on Social Status of Influence**

	Intelligence	EI	Extraversion	Conscientiousness
$\Delta$ AIC	47.10	183.10	35.60	21.30
$\Delta$ BIC	44.90	181.00	33.50	19.10
	Neuroticism	Openness to Experience	AIMTL	NCMTL
$\Delta$ AIC	10.40	3.00	28.90	18.90
$\Delta$ BIC	8.20	0.8	26.7	16.8

In addition, the relative contributions of different domains of individual differences were analyzed. As shown in Table 4.6, the first model entered both intelligence and EI which are considered as ability. The second model entered Big-Five personality traits except agreeableness and the final model entered both AIMTL and NCMTL. Based on the global fit statistics differences, the ability model showed more contribution than both the Big-Five personality traits model and the MTL model. However, it is hard to determine the relative contribution between the Big-Five personality traits model and the MTL model since the model with Big-Five personality traits showed a better fit index for AIC but it showed a worse fit index for BIC.

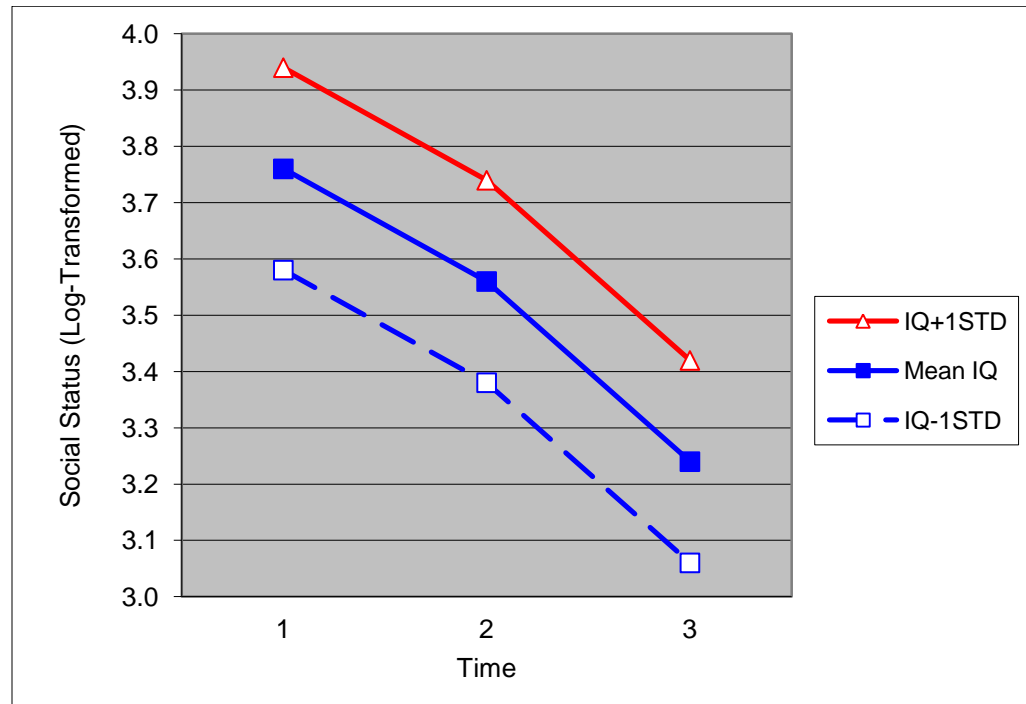
**Table 4.6. Ability vs. Big Five Personality Traits vs. MTL**

	Ability	Big Five	MTL
$\Delta AIC$	223.4	41.7	39.5
$\Delta BIC$	219.1	33.1	35.1

The second hypotheses for each variable (H1b, H2b, H3b, H4b, H5b, H6b, H7c, H7d) intend to examine the changing effects of each variable on social status over time. The results of the analyses to test these hypotheses are summarized in Table 4.7 and Table 4.8. In Table 4.7, the interaction effects between each variable and linear time effects are provided. The interaction effects between each variable and linear time effects show whether the linear change of social status is dependent on the effects of each variable. For example, the effects of a variable on social status increase over time when there are positive interaction effects. In Table 4.8, the interaction effects between each variable and quadratic time effects are provided. The interaction effects between each variable and quadratic time effects show whether the rate of change of social status is dependent on each predictor variable. For example, the effects of a variable on social status increase by 2\*coefficients per time where there are positive interaction effects.

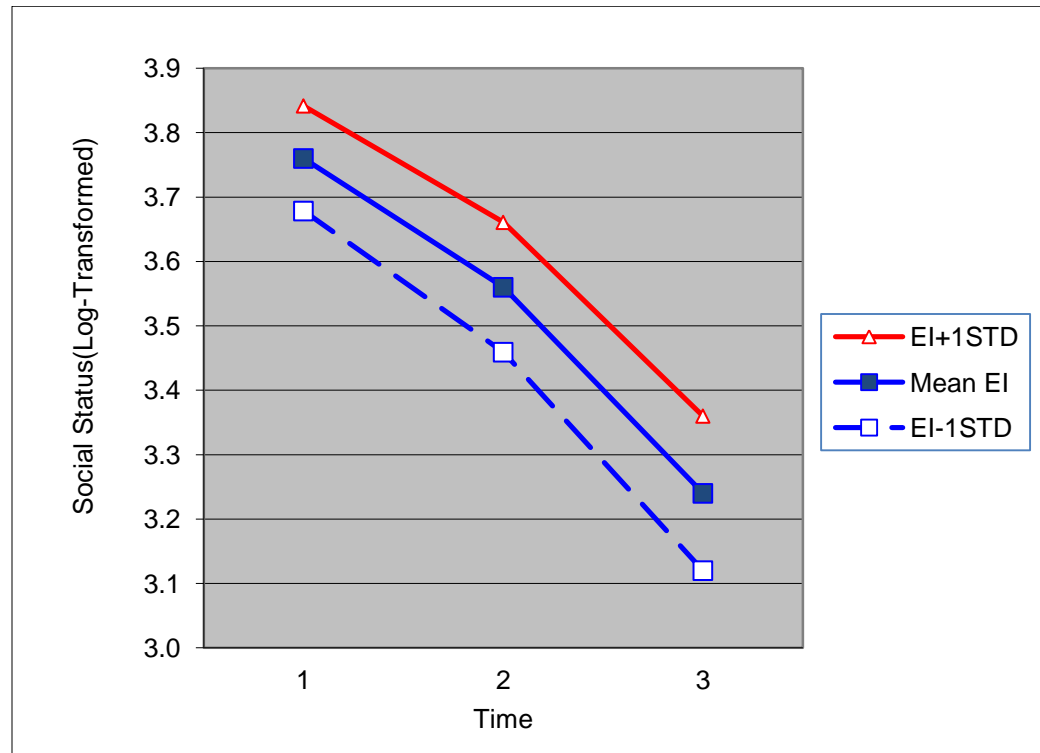
Hypothesis 1b proposed that the effects of intelligence on social status will increase over time. The interaction effect between intelligence and linear time effect was not significant ( $\gamma=.00$ , *ns*, see Model 16). The interaction effect between intelligence and quadratic time effect was also not significant ( $\gamma=-.001$ , *ns*, see Model 24). Thus, Hypothesis 1b was not supported. Figure 4.2 depicts the effects of intelligence on social status of influence. There are effects of intelligence on the intercept of social status of influence but no interaction effects of intelligence with time effects.

**Figure 4.2. Main Effects of Intelligence on Social Status of Influence**



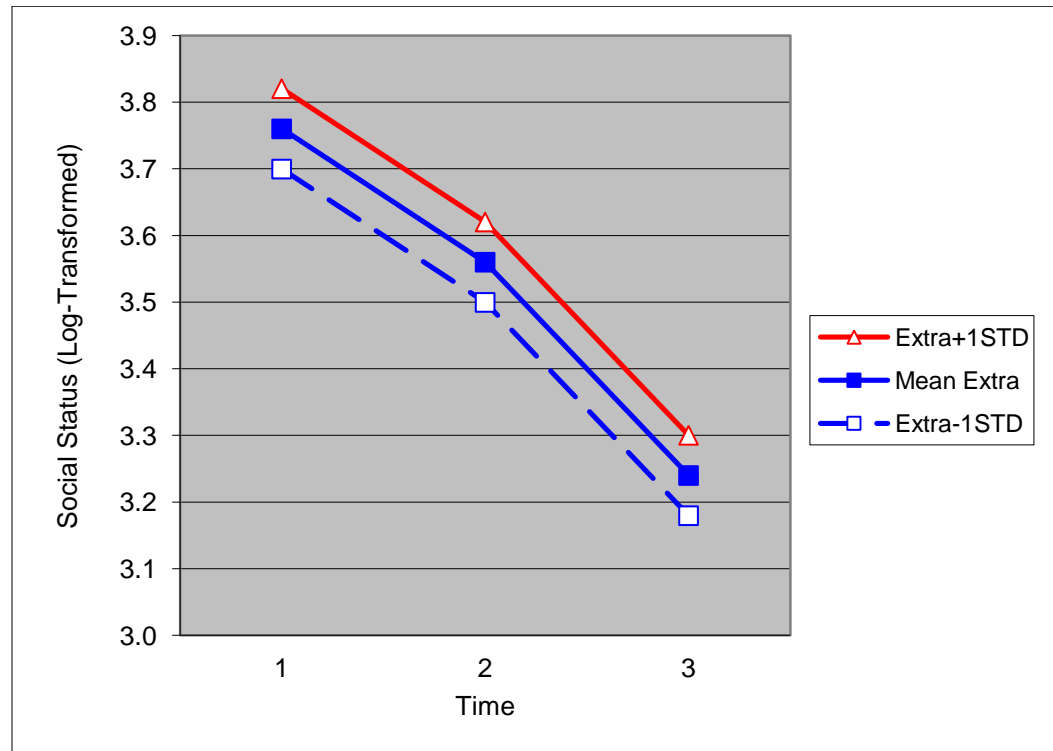
Hypothesis 2b predicted that the effects of EI on social status will increase over time. The interaction effect between EI and linear time effect was positively significant ( $\gamma=.04, p<.05$ , see Model 17). However, the interaction effect between EI and quadratic time effect was not significant ( $\gamma=.02, ns$ , see Model 25). This indicates that the social status of the people high on EI will decrease less than those low on EI but the rate of decrease does not change. Therefore Hypothesis 2b was supported. Figure 4.3 depicts the effects of EI on social status of influence. There were effects of EI on the intercept of social status of influence as well as the interaction effects of EI with linear time effects.

**Figure 4.3. Main and Interaction Effects of EI on Social Status of Influence**



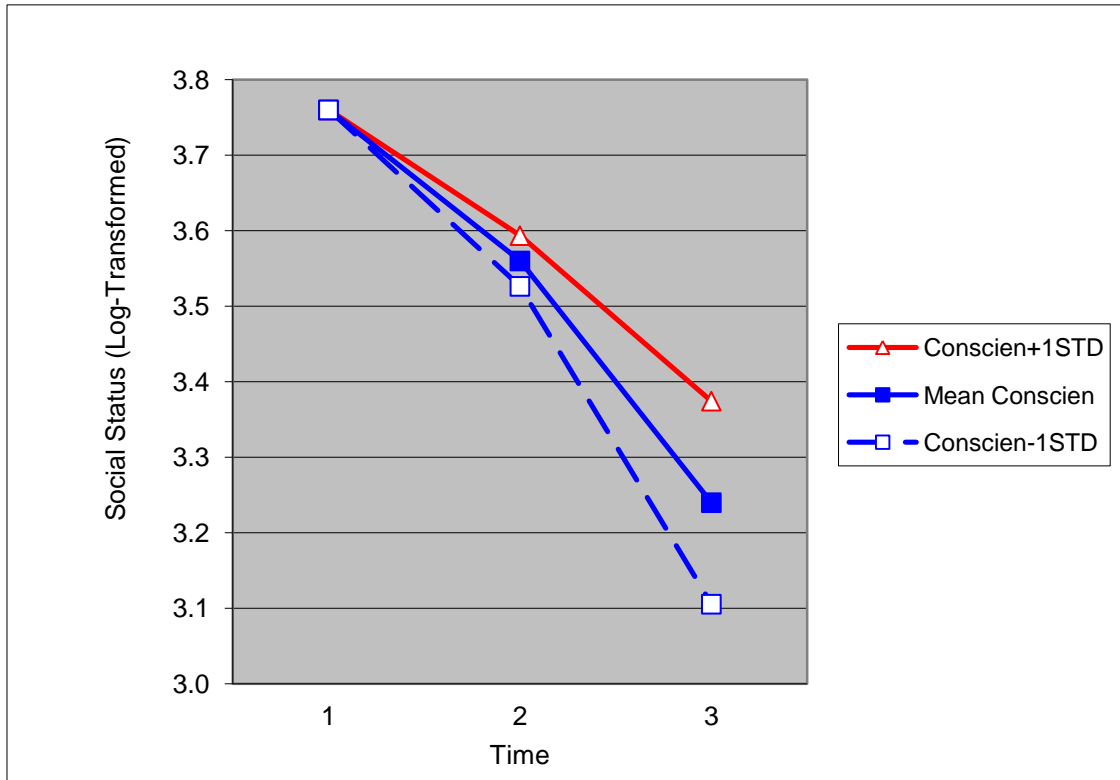
Hypothesis 3b suggested that the effects of extraversion on social status will decrease over time. The interaction effect between extraversion and linear time effect was not significant ( $\gamma=.02$ , *ns*, see Model 18). The interaction effect between extraversion and quadratic time effect was also not significant ( $\gamma=-.02$ , *ns*, see Model 26). Therefore, Hypothesis 3b was not supported. Figure 4.4 depicts the effects of extraversion on social status of influence. There were effects of extraversion on the intercept of social status of influence but no interaction effects of extraversion with time effects.

**Figure 4.4. Main Effects of Extraversion on Social Status of Influence**



Hypothesis 4b proposed that the effects of conscientiousness on social status will increase over time. The interaction effect between conscientiousness and linear time effect was not significant ( $\gamma=.02$ , *ns*, see Model 19). However, the interaction effect between conscientiousness and quadratic time effect was significant ( $\gamma=.06$ ,  $p<.01$ , see Model 27). This indicates that the social status of the people high on conscientiousness would decrease less during Time 2 and Time 3 than those low on conscientiousness. Therefore Hypothesis 4b was supported. Figure 4.5 depicts the effects of conscientiousness on social status of influence. There were no effects of conscientiousness on the intercept of social status of influence but significant interaction effects of conscientiousness with quadratic time effects.

**Figure 4.5. Interaction Effects of Conscientiousness with Quadratic Time Effects on Social Status of Influence**



Hypothesis 5b predicted that the effects of neuroticism on social status will decrease over time. The interaction effect between neuroticism and linear time effect was negatively significant ( $\gamma = -.04$ ,  $p < .05$ , see Model 20). However, the interaction effect between neuroticism and quadratic time effect was not significant ( $\gamma = .01$ ,  $ns$ , see Model 28). This indicates that the social status of the people high on neuroticism would decrease more on social status than those low on neuroticism but the rate of decrease does not change. While the changing effects of neuroticism were found, this relationship was opposite to the initial hypothesis. Therefore Hypothesis 5b was partially supported.

**Table 4.7. MLM Results for Interaction Effects with Linear Time Effects**

Effect	Model 16		Model 17		Model 18		Model 19	
	Est.	SE	Est.	SE	Est.	SE	Est.	SE
Intercept	3.76**	.04	3.76**	.04	3.76**	.04	3.76**	.04
Time	-.14**	.03	-.14**	.03	-.14**	.03	-.14**	.03
Time^2	-.06**	.01	-.06**	.01	-.06**	.01	-.06**	.01
Age	.12**	.01	.12**	.01	.12**	.01	.12**	.01
Education 1	.02**	.04	.02	.04	.02	.04	.02	.04
Education 2	.04	.05	.04	.05	.04	.05	.04	.04
LE	.13**	.04	.13**	.04	.13**	.04	.13**	.04
Agree	.00	.04	.00	.04	.00	.04	.00	.04
IQ	.01**	.00	.01**	.00	.01**	.00	.01**	.00
EI	.19**	.04	.17**	.04	.19**	.04	.19**	.04
Extra	.09**	.03	.09**	.03	.07*	.03	.09**	.03
Conscientiousness	.04	.03	.03	.03	.04	.03	.03	.03
Neuroticism	.03	.03	.04	.03	.03	.03	.03	.03
Open	-.04	.03	-.04	.03	-.04	.03	-.04	.03
AIMTL	.04	.03	.04	.03	.04	.03	.04	.03
NCMTL	.08**	.03	.08**	.03	.08**	.03	.08**	.03
Time*IQ	.00	.00						
Time*EI			.04*	.02				
Time*Extra					.02	.01		
Time*Conscientiousness							.02	.02

*note.* \*  $p < .05$ , \*\*  $p < .01$ , 814 members in 64 teams, Education Dummy: Reference: High School Diploma, 1: Junior College, 2: University

**Table 4.7. MLM Results for Linear Time Interaction Effects (Continued)**

Effect	Model 20		Model 21		Model 22		Model 23	
	Est.	SE	Est.	SE	Est.	SE	Est.	SE
Intercept	3.76**	.04	3.76**	.04	3.76**	.04	3.76**	.04
Time	-.14**	.03	-.14**	.03	-.14**	.03	-.14**	.03
Time^2	-.06**	.01	-.06**	.01	-.06**	.01	-.06**	.01
Age	.12**	.01	.12**	.01	.12**	.01	.12**	.01
Education 1	.02	.04	.02	.04	.02	.04	.02	.04
Education 2	.04	.05	.04	.05	.04	.05	.04	.05
LE	.13**	.04	.13**	.04	.13**	.04	.13**	.04
Agree	.00	.04	.00	.04	.0	.04	.00	.04
IQ	.01**	.00	.01**	.00	.01**	.00	.01**	.00
EI	.19**	.04	.19**	.04	.19**	.04	.19**	.04
Extra	.09**	.03	.09**	.03	.09**	.03	.09**	.03
Conscientiousness	.04	.03	.04	.03	.04	.03	.04	.03
Neuroticism	.05	.03	.03	.03	.03	.03	.03	.03
Openness to Experience	-.04	.03	-.05	.03	-.04	.03	-.04	.03
AIMTL	.04	.03	.04	.03	.02	.03	.04	.03
NCMTL	.08**	.03	.08**	.03	.08**	.03	.07*	.03
Time*Neuroticism	-.04*	.02						
Time*Openness to Experience			.03†	.02				
Time*AIMTL					.03*	.01		
Time*NCMTL							.02	.02

*note.* †  $p < .1$ , \*  $p < .05$ , \*\*  $p < .01$ , 814 members in 64 teams, Education Dummy: Reference: High School Diploma, 1: Junior College,

2: University



**Table 4.8. MLM Results for Interaction Effects with Quadratic Time Effects**

Effect	Model 24		Model 25		Model 26		Model 27	
	Est.	SE	Est.	SE	Est.	SE	Est.	SE
Intercept	3.76**	.04	3.76**	.04	3.76**	.04	3.76**	.04
Time	-.14**	.03	-.14**	.03	-.14**	.03	-.14**	.03
Time^2	-.06**	.01	-.06**	.01	-.06**	.01	-.06**	.01
Age	.12**	.01	.12**	.01	.12**	.01	.12**	.01
Education 1	.02	.04	.02	.04	.02	.04	.02	.04
Education 2	.04	.05	.04	.05	.04	.05	.04	.05
LE	.13**	.04	.13**	.04	.13**	.04	.13**	.04
Agreeableness	.00	.04	.00	.04	.00	.04	.00	.04
Intelligence	.005**	.00	.01**	.00	.01**	.00	.01**	.00
EI	.19**	.04	.17**	.04	.19**	.04	.19**	.04
Extraversion	.09**	.03	.09**	.03	.07*	.03	.09**	.03
Conscientiousness	.04	.03	.04	.03	.04	.03	.05	.04
Neuroticism	.03	.03	.03	.03	.03	.03	.03	.03
Openness to Experience	-.04	.03	-.04	.03	-.04	.03	-.04	.03
AIMTL	.04	.03	.04	.03	.04	.03	.04	.03
NCMTL	.08**	.03	.08**	.03	.08**	.03	.08**	.03
Time*IQ	.003†	.00						
Time^2*IQ	-.001	.00						
Time*EI			-.002	.06				
Time^2*EI			.02	.03				
Time*Extraversion					.06	.04		
Time^2*Extraversion					-.02	.02		
Time*Conscientiousness							-.10*	.05
Time^2*Conscientiousness							.06**	.02

*note.* \*  $p < .05$ , \*\*  $p < .01$ , 814 members in 64 teams, Education Dummy: Reference: High School Diploma, 1: Junior College, 2: University

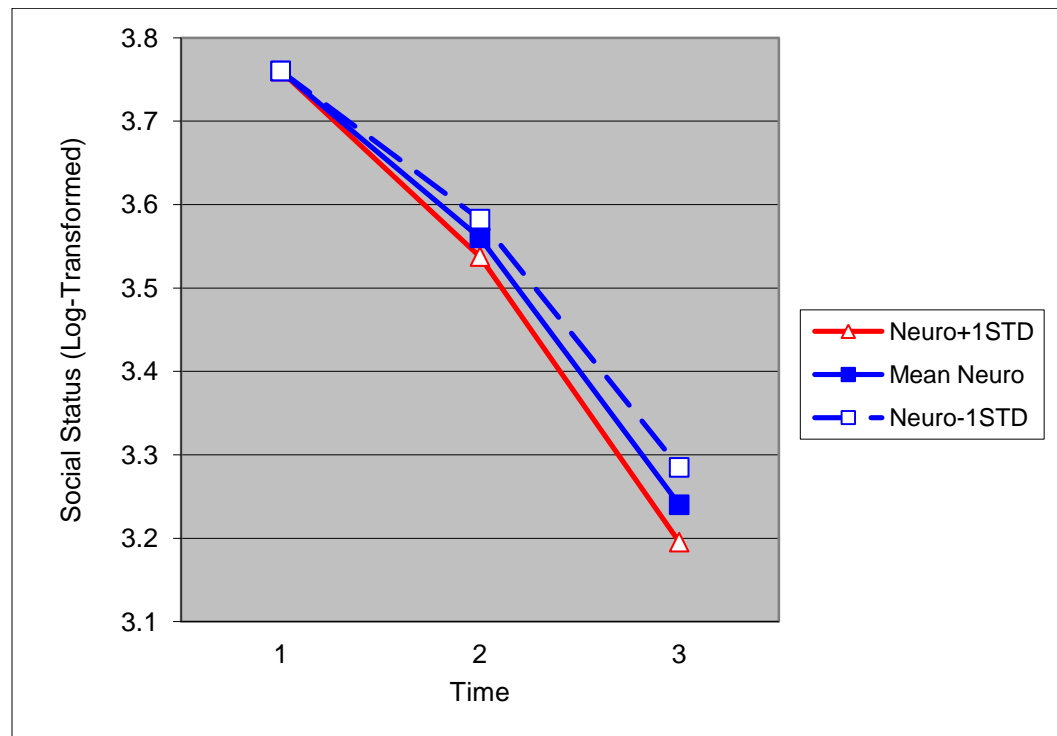
**Table 4.8. MLM Results for Quadratic Time Interaction Effects (Continued)**

Effect	Model 28		Model 29		Model 30		Model 31	
	Est.	SE	Est.	SE	Est.	SE	Est.	SE
Intercept	3.76**	.04	3.76**	.04	3.76**	.04	3.76**	.04
Time	-.14**	.03	-.14**	.03	-.14**	.03	-.14**	.03
Time^2	-.06**	.01	-.06**	.01	-.06**	.01	-.06**	.01
Age	.12**	.01	.12**	.01	.12**	.01	.12**	.01
Education 1	.02	.04	.02	.04	.02	.04	.02	.04
Education 2	.04	.05	.04	.05	.04	.05	.04	.05
LE	.13**	.04	.13**	.04	.13**	.04	.13**	.04
Agreeableness	.00	.04	.00	.04	.00	.04	.00	.04
IQ	.01**	.00	.01**	.00	.01**	.00	.01**	.00
EI	.19**	.04	.19**	.04	.19**	.04	.19**	.04
Extra	.09**	.03	.09**	.03	.09**	.03	.09**	.03
Conscientiousness	.04	.03	.04	.03	.04	.03	.04	.03
Neuroticism	.05	.03	.03	.03	.03	.03	.03	.03
Open	-.04	.03	-.06	.03	-.04	.03	-.04	.03
AIMTL	.04	.03	.04	.03	.02	.03	.04	.03
NCMTL	.08**	.03	.08**	.03	.08**	.03	.07**	.03
Time*Neuroticism	-.06	.05						
Time^2*Neuroticism	.01	.02						
Time*Openness to Experience			.05	.04				
Time^2*Openness to Experience			-.01	.02				
Time*AIMTL					.02	.04		
Time^2*AIMTL					.01	.02		
Time*NCMTL							.01	.04
Time^2*NCMTL							.01	.02

*note.* \*  $p < .05$ , \*\*  $p < .01$ , 814 members in 64 teams, Education Dummy: Reference: High School Diploma, 1: Junior College, 2: University

Figure 4.6 depicts the effects of neuroticism on social status of influence. There were no effects of neuroticism on the intercept of social status of influence but significant interaction effects of neuroticism with linear time effects.

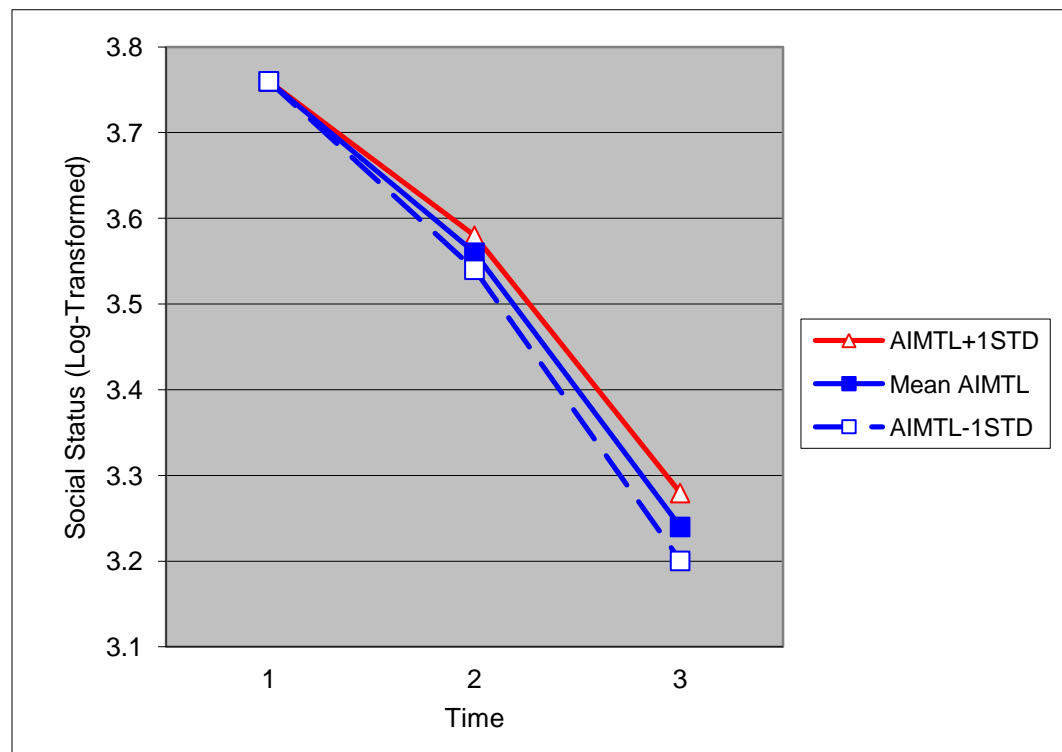
**Figure 4.6. Interaction Effects of Neuroticism with Linear Time Effects on Social Status of Influence**



Hypothesis 6b predicted that the effects of openness to experience on social status will decrease over time. Neither the interaction effect between openness to experience and linear time effect ( $\beta = .03$ , *ns*, see Model 21), nor the interaction effect between openness to experience and quadratic time effect ( $\beta = -.01$ , *ns*, see Model 29), was significant. Therefore Hypothesis 6b was not supported.

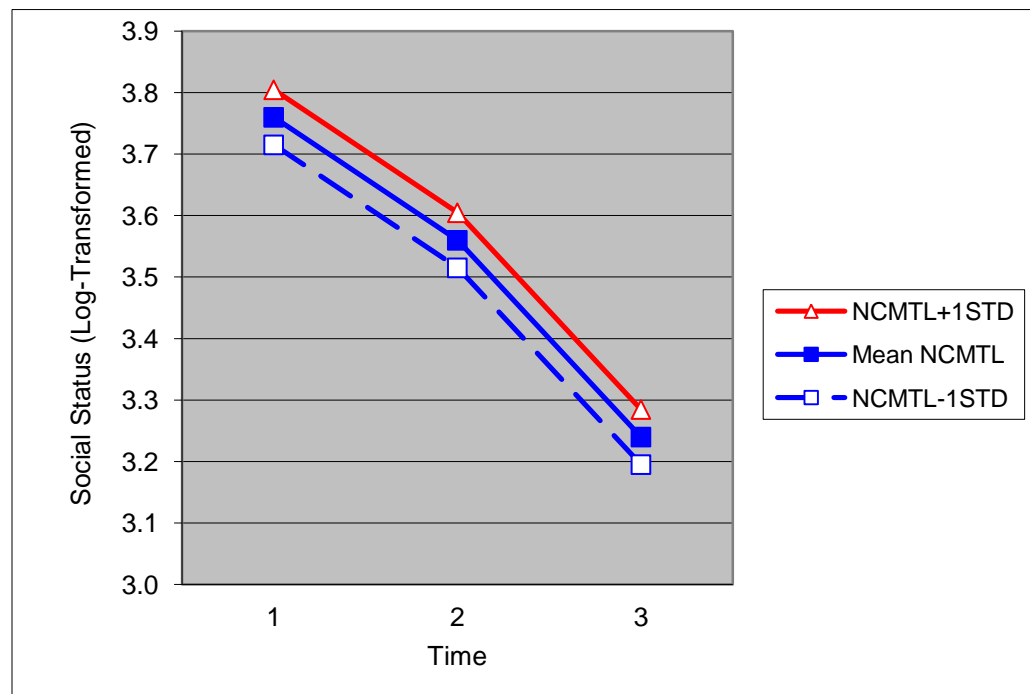
Hypothesis 7c predicted that the effects of AIMTL on social status will increase over time. The interaction effect between AIMTL and linear time effect was positively significant ( $\beta=.03, p<.05$ , see Model 22). However, the interaction effect between AIMTL and quadratic time effect was not significant ( $\beta=.01, ns$ , see Model 30). This indicates that the social status of the people high on AIMTL will decrease less than those low on AIMTL but the rate of change does not change. Therefore hypothesis 7c was supported. Figure 4.7 depicts the effects of AIMTL on social status of influence. There are no effects of AIMTL on the intercept of social status of influence but the interaction effects of AIMTL with linear time effects were significant.

**Figure 4.7. Interaction Effects of AIMTL with Linear Time Effects on Social Status of Influence**



Hypothesis 7d proposed that the effects of NCMTL on social status will increase over time. The interaction effect between NCMTL and linear time effect was not significant ( $\alpha=.01$ , *ns*, see Model 23). The interaction effect between NCMTL and quadratic time effect was also not significant ( $\alpha=.01$ , *ns*, see Model 31). Thus, Hypothesis 7d was not supported. Figure 4.8 depicts the effects of NCMTL without interaction effects with time effects on social status of influence. There were effects of NCMTL on the intercept of social status of influence but no significant interaction effects of NCMTL with time effects.

**Figure 4.8. Main Effects of NCMTL on Social Status of Influence**



The findings of this study are summarized in the Table 4.9.

**Table 4.9. Summary of Findings**

Hypothesis	Findings
1a: Intelligence is positively related to social status of influence in newly formed small groups.	Supported
1b: The positive effect of IQ on social status of influence will increase over time.	Not Supported
2a: EI is positively related to social status of influence in newly formed small groups.	Supported
2b: The positive effect of EI on social status of influence will increase over time.	Supported
3a: Extraversion is positively related to social status of influence in newly formed small groups.	Supported
3b: The positive effect of extraversion on social status of influence will decrease over time.	Not Supported
4a: Conscientiousness is positively related to social status of influence in newly formed small groups.	Partially Supported
4b: The positive effect of conscientiousness on social status of influence will increase over time.	Supported
5a: Neuroticism is negatively related to social status of influence in newly formed small groups.	Partially Supported
5b: The negative effect of neuroticism on social status of influence will decrease over time.	Partially Supported
6a: Openness to experience is positively related to social status of influence in newly formed small groups.	Partially Supported
6b: The positive effect of openness to experience on social status of influence will decrease over time.	Not Supported
7a: AIMTL is positively related to social status of influence in newly formed small groups.	Partially Supported
7b: NCMTL is positively related to social status of influence in newly formed small groups.	Supported
7c: The positive effect of AIMTL on social status of influence will decrease over time.	Partially Supported
7d: The positive effect of NCMTL on social status of influence will decrease over time.	Not Supported

## CHAPTER V

### DISCUSSION AND CONCLUSION

Social status and hierarchies of social status are ubiquitous in social groups and organizations (Hogan, 1983, 1991) and seeking social status is believed to be one of the basic human motives (Barnard, 1938; Vroom, 1964). Among many approaches applied from a variety of fields of studies, one of the most widely investigated topics is the role of individual differences in social status. In spite of the number of the studies on this topic, there are two notable limitations in the previous studies: (1) a singular approach, focusing only on one domain of individual differences (e.g., personality traits), and (2) a static approach, which implicitly assumes that the relationships do not change over time. In order to address these limitations and extend current understanding, this study addresses two research questions: (1) how are multiple domains of individual differences related to social status of influence?, and (2) do the effects of individual differences remain static or change over time? In particular, this study integrates multiple domains of individual differences (ability represented by intelligence and EI, traits represented by Big-Five personality traits, and motives represented by motivation to lead) in explaining the phenomena of social status of influence in a longitudinal research design.

Findings show that the mean level of social status, as measured by advice networks, decreases over time. At a basic level, this indicates that, on average, members report reaching out more to other people (and to a larger number of people) for support and advice during the early stage of social groups than the later stage of

social groups. While this finding supports the basic argument of this study that social status is not static but changes over time, it is also interesting because it is somewhat unexpected when considering the premise that people are expected to develop social relationships with each other over time. There are several plausible reasons for this. First, individuals may approach more people during the early stage of social groups due to the ambiguity and lack of interpersonal information. Over time, however, members can identify more clearly those who are more reliable and have abilities and quality behaviors. Second, it is also possible that people may approach others more during the early stage of social groups because they are not familiar with the environments, tasks, and rules and regulations of the organizations. As they become more familiar with the environments, tasks, and rules and regulations of their organization over time, they may not need many people to get task-related advice. In accordance with accumulated interpersonal knowledge and the familiarity with the contexts of the organizations, members might narrow down the set of people they want to go for the task-related advice. Third, there might be hidden patterns of interpersonal relationships due to the research design of this study. The first measure of the social status was conducted at the end of the first week. While it is not shown in the data of this study, it is possible that people quickly develop their social relationships during the very early stage of social groups and reached the peak points during the first week. Finally, there might be some contextual factors that have not been shown in this study. During the training, all soldiers are randomly given opportunities to participate in the leadership roles. In this process, external leaders may recognize some members who are more capable of leading others than others.



Over time those who are perceived to be more capable of by external leaders may be given more opportunities to participate in the leadership roles, which entail social-categorization within social groups (Oakes, Haslam, & Turner, 1994). When social-categorization occurs, other members may perceive those who are given more leadership opportunities as more influential within social groups.

This study also found that all variables are related to social status of influence but there are different relationships between each domain of individual differences and social status. Intelligence, extraversion, and NCMTL were found to have incremental validity on overall social status above and beyond other variables, and the effects do not change over time. As hypothesized, those who are more intelligent, extraverted, and with high NCMTL are more likely to have high overall social status with social groups than those who are less intelligent, extraverted and with low NCMTL. However, contrary to expectations, these individual differences do not have changing effects over time. These findings indicate that other members are able to distinguish those who are intelligent, extraverted and with high NCMTL even during early stage of social groups and perceive that these people deserve higher social status. These findings are unexpected, particularly for intelligence and NCMTL, since this study suggested that intelligence and NCMTL are not likely to be identified during the early stage of the social groups. It may be because, contrary to business organizations, participants of this study continuously and more frequently interact with each other in this particular setting.

EI also predicted overall social status above and beyond other variables, as well as interaction effects with linear time on social status. As hypothesized,

individuals with high EI are not only likely to have high social status, but also to maintain their social status when others lose it over time. Moreover, EI has the biggest relative contribution in explaining social status. Therefore, the findings show that EI is not only important in building social relationships during the early stage of interpersonal relationships, but also important in maintaining and extending relationships over time (e.g., Lopes et al., 2003).

Conscientiousness did not incrementally predict social status beyond other personality characteristics, but did have positive interaction effects with quadratic time on social status over time. Contrary to expectations, highly conscientious individuals were not likely to attain higher social status than others. However, as hypothesized, the effects of conscientiousness on social status do increase over time, since they tend to maintain their social status better than those who are not conscientious. These findings are consistent with previous research that conscientious people may not be able to show superior performance in a short period of time (e.g., Hogan et al., 1992; LePine et al., 2000; Yeo & Neal, 2004). In addition, their behavioral characteristics may not be identified or be perceived favorably by other members during the early stage of social relationships. It is also possible that others may misattribute conscientious behaviors that they witness to situational factors such as the military context and that only repeated contact with group members allows for accurate appraisals of this trait. If conscientiousness is valued in this context, it could be expected that its effects on status would only become manifest over a longer period of time.

Neuroticism does not have incremental validity on overall social status, but has negative interaction effects with linear time effects on social status over time.

These findings indicate that highly neurotic members are not likely to have different social status with others during the early stage of social group. However, they tend to lose their social status faster than those emotionally stable over time. These findings are inconsistent with a recent study by Bendersky and Shah (2013) which found a positive relationship between neuroticism and status attainment, but consistent with the findings of the study by Anderson et al. (2001). Therefore, the relationships between neuroticism and social status are inconclusive. The inconsistent findings on the relationships between neuroticism and social status may come from the contexts of the studies operated. Therefore, future research should explore whether there are different relationships between neuroticism and social status under different situations or with different criteria.

AIMTL does not have incremental validity but has positive interaction effects with linear time effects on social status over time. Thus, those with high AIMTL are not likely to have relatively higher social status than others during the early stage of social group. However, assuming leadership roles frequently (i.e., high AIMTL) appears to be helpful for one to be perceived favorably by other members over time. Finally, openness to experience does not have incremental validity on overall social status, nor does it have interaction effects with time effects on social status over time. These findings may be explained by the context of this study. People with high openness to experience enjoy newness and like to challenge the status quo of the organizations (Costa & McCrae, 1992). However, military organizations emphasize the order of rank which may not provide situational cues for those with high openness to experience.

In summary, as discussed earlier, there have been a great number of studies which have explored the role of human agency on social relationships, status and structures. Consistent with previous studies, the findings of this study suggest that there are significant effects of individual differences on social status, which reemphasizes the importance of human agency in explaining social status. In addition, this study provides evidence that previous research has only provided a partial explanation of the role of individual differences on social status. In particular, the present study found that each domain of individual differences has a unique and different way to contribute to social status. Therefore, relationships between individual differences and social status are more dynamic and complex than previously suggested. In showing the dynamic nature of these relationships, this study extends the current understanding of the relationships between individual differences and social status. Furthermore, this study suggests that future research should take into account the dynamic nature of human beings in explaining social relationships and social status within organizations.

### **Theoretical and Practical Implications**

#### **Theoretical Implications**

The findings of this study have both theoretical and practical implications.. First, as neo-socioanalytic theory of personality emphasizes (Roberts & Wood, 2006), this study integrates multiple domains of individual differences in examining the phenomena of social status within newly-formed team organizations. While it has been emphasized that the complex nature of human beings should be taken into

account in studying the phenomena in organizations, only a few studies have attempted to integrate multiple domains of individual differences (see Harms et al., 2007 for an exception). The findings of this study confirm that the psychological aspects of human beings can play a significant role in determining hierarchies of social status, which is consistent with previous findings (e.g., Judge et al., 2002; Klein et al., 2004; Sasovova et al., 2010). In addition, findings show that each of the different domains of individual differences contributes to the status attainment (and retention) process. In particular, this study provides evidence that the ability domain represented by EI and intelligence has stronger effects than other domains in explaining the emergence of social status of influence in newly-formed teams.

The findings also suggest that the nature of the relationships between individual differences and social status are complex and dynamic, rather than simple and linear, as previous studies have implicitly assumed (e.g., Judge et al., 2002). While there has been increasing emphasis on the changing nature of social structure and social status, only a few studies have explored this in longitudinal research settings (see Sasovova et al., 2010 for an exception). This study provides evidence that the social structure of groups is not static but changes over time as many team theorists (e.g., Ilgen et al., 2005; Mathieu et al., 2008) and social network scholars have argued (e.g., Moody, McFarland, & Bender-deMoll, 2005). There are also differences in the patterns of changing effects among different domains of individual differences. Some have effects during early stages of social groups while some have effects during later stages of social groups. Some have positive effects while some have negative effects over time. Even if the main effects of some variables do not

hold significance in the full model, the effects did not disappear but were rather complexly involved in the changing process of social status. It should be noted, however, that the reason for the changing effects of individual differences on social status may not be because only social status changed over time, but because personality also changed over time. In other words, the increased effects of personality on social status during later stages of social groups (e.g., EI, conscientiousness, neuroticism, AIMTL) may not merely be because the social status of members changed (i.e., changes of dependent variable) but because personality of the members changed over time (i.e., changes of independent variables). Since this study cannot show whether personality changed over time, future research should test whether personality also changes (i.e., time-varying predictors) in accordance with social status. The results of this study suggest that human beings are very complex entities and that human social activities are even more complex (Daft & Weick, 1984). It appears that multiple domains of individual differences play complex and dynamic roles in explaining individual social status and hierarchies of social groups (Roberts & Wood, 2006).

This study also contributes to the social networks literature. There has been a consistent criticism of social network research that researchers have not considered the nature of human beings but mainly focused on the effects of social structures on organizational outcomes, even though such social structures are constructed by people and the relationships among people (e.g, Klein et al., 2004; Sasovova et al., 2010). Some social network scholars have argued that psychological theories should be included to provide richer explanation of the properties of social structures of social

groups (e.g., Burt, 2010; Kilduff & Krackhardt, 2008; Sasovova et al., 2010). Even though there have been studies which have examined the role of human agency on the properties of social structures (e.g., Bingham et al., in press; Klein et al., 2004; Sasovova et al., 2010), these studies have not been free from the two limitations this study identified (i.e., single and static perspective). Particularly, there have been only a few studies which have utilized a longitudinal design (e.g., Sasovova et al., 2010; Schulte et al., 2012). Even if other studies argued that they adopted a longitudinal design, in the strict sense, it is not a longitudinal design since they merely separate the measurement of independent and outcome variables (e.g., Klein et al., 2004). In a similar vein, they have only adopted two time points (Sasovova et al., 2010). These approaches do not explain whether there is a pattern of changes in the properties of social groups (e.g., centrality, density, centralization) over time. The present study adds to our understanding of the dynamics of social groups by showing the pattern of changes of social status during three time points, and linking the dynamic effects of multiple domains of individual differences with social status over time.

The findings of changing effects of individual differences provide insight to the extant theory of trait activation (Tett & Guterman, 2000). Trait activation theory argues that traits are not activated unless there are situational cues (Tett & Guterman, 2000). The changing effects found in this study provide implicit evidence that personality may not always play the same role in social relationships. This study is not able to provide direct explanation of whether domains of individual personality are activated at the same time because it did not directly examine whether individual differences are activated or not. However, the changing effects of individual

differences provide implicit information that each domain of individual differences is not activated consistently across different stages of social groups. It should be noted, however, that there might be two reasons for these changing effects of individual differences. First, it may be due to the different situational cues across different stages of social groups. As social groups are not static but change, social relationships, interpersonal knowledge, and task familiarity among members are expected to be different across different stages of social groups. These different natures of social groups across different stages may provide different situational cues for members when they activate their personalities. Second, each domain of individual differences may require a different period of time to be fully identified by other members of team. For example, those variables which have significant effects on social status during the early stage of social groups (e.g., intelligence, extraversion, NCMTL) may be immediately identified by other members, while those variables which showed delayed effects on social status may require more time to be observed and identified by other members. Nonetheless, the findings support the basic arguments of trait activation theory, which suggests that there are differences of the effects of individual differences across different situations.

The findings of this study also contribute to the team literature. Teams are one of the most widely utilized forms in modern organizations. There are many areas of team studies, and one of the important issues is the position and status within teams and its relationship with team composition (Mathieu et al., 2008). Mathieu et al. (2008) argued that there are only handfuls of studies which have shown the changing nature of teams over time (see Harrison, Prices, & Bell, 1998 and Harrison, Price,



Gavin, & Florey, 2002 for exceptions). As the findings of this study suggest, team composition and status hierarchies are not static but change over time. While this study does not focus on the team level, the findings can still provide insight to the literatures of team composition. As Mathieu et al. (2008) argued, previous studies in the team composition, which have been largely based on the cross-sectional research design, might be far from providing complete explanations of the nature of teams since these previous studies have not taken into account the changing nature of team composition.

This study also has some methodological implications for the studies which have investigated the nested nature of social relationships (e.g., informal leader emergence in teams, teams within organizations, etc) and organizational structures (e.g., density, centralization, connectivity) in the longitudinal settings. There have been agreements that social status is constructed through social relationships and embedded in the social structures (e.g., Balkundi & Kilduff, 2006; Uhl-Bien, 2006) and the social structures and social relationships are changing over time (e.g., Sasovova et al., 2010). Therefore, researchers have suggested that studies which explore the nature of social relationships and the properties of social structures should address three methodological issues: (1) social network methods, (2) multi-level analysis, and (3) longitudinal study settings. As previous studies suggested, social network methods can reduce bias associated with measurement from traditional survey methods (e.g, Emery, 2012). Moreover, many scholars have considered social status emergence (and informal leader emergence) a within-group process (e.g., Judge et al., 2002) and argued that multi-level model should be adopted to take into account

the nested nature of the phenomena (e.g., Klein et al., 2004). Finally, scholars have suggested adopting longitudinal research designs to take into account the changing nature of social relationships (Sasovova et al., 2010). Only few studies have tried to address these methodological issues. For example, Klein et al. (2004) used social network methods and multilevel analysis, but they only measured social status once. Similarly, Sasovova et al. (2010) adopted social network methods and measured social status during two time points, but did not adopt multilevel analysis because their study was conducted in one group. Since this study used social network methods to measure social status, adopted multilevel analytic framework, and designed a longitudinal study, it can address the methodological gaps of extant studies.

Finally, this study suggests that the understanding of organizational phenomena can be better understood by integrating theoretical and methodological perspectives across different fields of study. As discussed earlier in this study, social status and informal leader emergence seem to be conceptually and empirically related to each other, particularly in the leaderless or self-managed team organizations. However, there seems to be a gap between scholars from different fields of study who research the role of individual differences on social status in organizations. As noted earlier, there have been an enormous amount of studies which have explored the role of individual differences on leadership process. Leaders are apparently a form of positional and relational entity (i.e., social status) within organizations. In spite of a large literature concerning the processes underlying leadership emergence in groups, social network scholars who study the relationship between individual differences and social network positions have not included human agency in explaining social

structure (e.g., network centrality in social groups) of the organizations (e.g., Kilduff & Brass, 2010; Klein et al., 2004; Sasovova et al., 2010). There might be several plausible reasons of these gaps. On the one hand, the criticism leveled at social network scholars suggests that they have failed to acknowledge or recognize the work of scholars in closely-related fields. On the other hand, it is possible that they might consider these phenomena (e.g., informal leader emergence, social network centrality, and social status) as distinct from the constructs they typically. Similarly, it is only recently discussed that leadership scholars have suggested adopting social network approaches in exploring leadership processes. For example, a growing number of studies have suggested integrating social network approaches into exploring leadership processes (e.g., Balkundi & Kilduff, 2006; Emery, 2012), and some scholars have used these terminologies (i.e., social status, leader emergence, network centrality) interchangeably (e.g., Harms et al., 2007; Klein et al., 2004). Yet, there are many issues that should be addressed through theoretical arguments among scholars from different fields of studies. For example, researchers from different fields of study need to discuss the theoretical differences, similarity, and relationships of the phenomena in the organizations. It would be worth discussing whether the phenomena scholars want to explore are the same but are differentially defined, using different constructs in various fields of studies, or whether the phenomena themselves are different.

### **Practical Implications**

There are also practical implications in this study. Selecting appropriate individuals for leadership roles is in the long term interest of organizations. Many

organizations use multiple criteria when they select their employees (Fulmer & Conger, 2004; Phillips & Schmidt, 2004). Organizations can use these multiple criteria more effectively when they recognize the relative importance of different criteria. The findings of this study provide evidence that all of the domains of individual differences investigated in this study are important criteria in explaining social status. Moreover, this study suggests that the ability domain has the strongest effects on the social status within social groups. People with high EI and intelligence are more likely to move to influential positions within organizations. However, it is not usually possible that a person would have high scores on all the criteria at the same time. Therefore, organizations should not look at only one aspect of human agency. They need to consider multiple domains of individual differences simultaneously before deciding the most appropriate person for the given positions in the organizations.

In addition, managers should note that the effects of individual differences are not static but dynamically change over time (Hofmann, Jacobs, & Baratta, 1993). Previous research in dynamic criteria has found that individual performance is determined by multiple criteria (Viswesvaran & Ones, 2000), that the nature of individual performance itself may change over time (e.g., Deadrick & Madigan, 1990), and that, as a result, that the predictors of performance may change over time. Similarly, this study showed that multiple domains of individual differences complexly determine social status of members within social groups. Therefore, organizations should not assume that predictors at one time point will be relevant later on. This means that one time evaluation based on certain domains of individual

differences may provide wrong information about the candidate employees, and that additional testing should be done before important decisions are made.

Even if hierarchies of social status are inevitable within organizations, such hierarchies might demoralize those at the lower level of social status in the organizations. Since the findings of this study suggest that individual differences are related to social status of influence, it might be valuable for organizations to develop programs that help their employees recognize their personality and the effects of their personality on social status in the organizations. As previous studies have found, people tend to recognize how they make impressions on others (e.g., Carlson & Furr, 2009; Carlson & Kenny, in press). Moreover, Carlson, Vazire, and Furr (2011) found people tend to make a distinction between how they see themselves and how others see them. These studies indicate that “people understand that there are aspects of themselves that do not find their way into the world” (Carson et al., 2011, p844). Therefore, organizations may provide their employees with consulting programs about how to effectively deal with or utilize their personality across different organizational situations. In addition, organizations may facilitate proper contexts that help employees to develop their personalities. Previous studies have found that organizational contexts and culture influence changes of certain traits of their members (Harms, Roberts, & Winter, 2006). For example, Harms et al. (2006) found that the openness to experience trait was increased under highly intellectual environments. In doing so, organizations may provide practical and useful assistance for those who are struggling with constructing valuable social relationships and achieve high social status within organizations.

### **Limitations and Future Directions**

While the findings of this study provide several important implications, this study also has some limitations. First, the participants of the study are all male and all of them are in their 20s. In a way, all organizations are unique but in general, they are relatively diverse with regards to gender, age and ethnicity. As previous studies have discussed, there might be differences in social status attainment and social structure between single-gender organizations and mixed-gender organizations (Brass, 1985; Eagly & Karau, 1991). For example, Brass (1985) found mixed results in the patterns of interactions among men and women. While it was found that men were perceived to be more influential than women, it was also found that women were more capable of establishing informal networks, particularly with other women within organizations, than are men (Brass, 1985). Moreover, ethnic diversity and age differences may have impacts on the phenomena of social status within social groups. Therefore, in a diverse organization, the hypothesized relationships might not be consistent. Future research should explore the hypothesized model in different settings. In doing so, such future study will further enhance the generalizability of the findings.

This study was conducted during a relatively short period of time, even though it adopted a longitudinal design during the entire life cycle of the teams. The primary reason of this short period is because the teams exist for only five weeks. While this study explores the emergence of social status from the beginning of the team foundation and the end of the team life cycle, other organizations exist for a longer period of time. During the longer period of time, the changing pattern of social status

and the relationships between individual differences and social status might be different. On a similar note, the interval of measurement is important in the longitudinal study. In this study, the time interval of measurements was 2 weeks. Thus, the findings in this study explain the changing effects of individual differences on social status of influence in 2-week period. These findings may be different with other time intervals, for instance shorter time intervals (1 week or day to day) and longer time intervals (month or 6 months). In addition, this study has only 3 occasions (i.e., Time 1, Time 2, and Time 3). Even if this study found the quadratic changing pattern of mean social status in teams during three time points, more dynamic changing patterns might also be plausible, for instance, cubic change over a longer period of time or fluctuation during a short period of time. Therefore, future research should adopt different time frames to investigate and fully understand the changing pattern of social status and the effects of individual differences on social status over time.

There might be alternative explanations which have not been included in this study. While this study focuses on intelligence, EI, Big-Five personality traits and MTL, previous studies have also explored other sub-domains of individual differences (e.g. vocational interests, non-cognitive abilities) in predicting social status within social groups. As Burt (2010) argued, there is a very broad range of domains of personality which researchers should consider to understand the structure of social relationships. For example, self-monitoring has been found to be related to social network centrality (e.g., Mehra et al., 2001; Sasovova et al., 2010). Similarly, self-efficacy, which is the basic component of the social cognitive theory (Bandura, 1986,

1997), has also have been studied widely in the relevant studies of social status. In addition, recently a growing body of studies has emphasized the positive aspects of human beings such as psychological capital (e.g., Luthans, 2002; Luthans, Youssef & Avolio, 2007) and thriving (e.g., Spreitzer, Sutcliffe, Dutton, Sonenshein, and Grant, 2005; Paterson, Luthans, & Jeung, in press). It might be worth investigating how these other aspects of human beings are related to social status in team organizations.

It has long been argued that contextual factors play significant roles in explaining social relationships and social structures which determine social status and hierarchies of social status within social groups. This study is conducted in the military setting which is characterized as a very rigid hierarchy and low individuality. Other organizations might have different characteristics which may influence the process of social relationship construction differently. Anderson et al. (2008) found that organizational culture and the person-organization (P-O) fit predicts influence. They found that extraversion is strongly related to influence in a consulting firm, where teamwork is emphasized and highly valued while conscientiousness is strongly related to influence in an engineering department where individual work is more important than team work (Anderson et al., 2008). Thus, the hypothesized relationships might not be the same in different research settings. In addition, even in the same organization, other potential contextual factors might moderate the relationship between individual differences and social status. For example, team environments such as external leaders' behaviors and/or team climate might strengthen or weaken the effects of individual differences on social status. Therefore, future studies should explore various contextual effects in studying the effects of



individual differences on the social status in teams. In doing so, future studies will contribute to better understand and explain the relationship between individual differences and social status in social groups.

This study only focused on the individual social status in social groups using advice network in-degree centrality (i.e., prestige). While advice networks have been widely studied in the research in organizations, other types of networks such as friendship networks have been also used in the studies of organizations. Moreover, a number of different methods to measure centrality have been used besides in-degree centrality. For example, betweenness centrality, which is another type of centrality, can explain the different meaning of social status. In addition, this study has not explored any team-level relationships in analyzing social status. In previous studies in teams, team density and centralization of the team social network were analyzed to explain the pattern of relationships that comprises a team. Future studies need to explore the effects of multiple domains of individual differences of team members on team compositions such as density and centralization as well as the changing pattern of density and centralization of teams over time. Therefore, further analysis should be undertaken to better understand the dynamic nature of the relationships between individual differences and social status at the individual level as well as team level.

In addition, while the findings of this study explain informal social status, it would be interesting to explore whether those in the high social status will actually perform better and move to high social status in the formal organization. Therefore, follow-up studies will be meaningful to examine the relationships between informal social status and formal social status, and between informal social status and

performance during longer period of time. In addition, high social status may have effects on personality development. Even if the belief that personality is stable has for a long time been assumed (e.g, Costa & McCrae, 2006), recent personality scholars have argued that personality can change and be developed (Mroczek & Little, 2006; Roberts, Caspi, & Moffitt, 2003; Roberts, Walton, Viechtbauer, 2006). Roberts et al. (2003) found that experience at work is related to the development of personality traits of young working adults and the same traits predict the experience at work and argued that personality traits and work experiences were responsive each other. Therefore, it might be interesting to research whether different aspects of social status (resource power, social influence, positional power, etc.) are related to personality changes and development and whether personality changes and development are related to social status changes in a long period of time.

While this study explains who emerges in high social status, it has limitations in explaining how people establish dyadic relationships over time. In other words, this study does not explain whether intelligent people seek out other intelligent people for advice or goes to those with high EI. Recent development of social network methodology (e.g. SIENA model, ERGM model) enables one to examine more complex nature of social relationships. For example, SIENA models enable one to test the selection effects and contagion effects in developing social relationships within social groups. Selection effects explain that people develop relationships based on certain characteristics over time, while contagion effects explain whether people become similar over time when they have established relationships. So, future

research may be beneficial if they take a close look at the relationships building process.

### **Conclusion**

The present study enhances our understanding of the effects of individual differences on social status by conducting research in newly-organized teams. The findings in this study confirm that individual differences are important factors in explaining social status within social groups. Particularly, this study suggests that the relationships between individual differences are more complex than simplistic. While multiple domains of individual differences are related to social status they have different magnitude of effects in explaining social status. Moreover, the effects of individual differences on social status change over time. Some effects remain static, some effects decrease, and some effects increase over time. In conjunction with previous studies this study provides the merit of further scholarly attention in the study of social status based on individual differences in longitudinal study settings.

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## Appendix A

### Informed Consent Form

**Identification of Project:** A Study on the Emergence of Social Network in Newly Organized Teams.

**Purpose of the Research:**

The purpose of this study is to investigate the relationship between personal characteristics and relationships of members in newly organized teams in the Korean Army

**Procedures:**

This research will be conducted four times for soldiers and one time for platoon leader and team leader. Survey will be conducted in the unit of the training center. All surveys will take about 30-40 minutes. For soldiers, Survey 1 is to answer questions of their characteristics. Survey 2 and 3 are to answer questions of the relationship with other members. Survey 4 is to answer questions of the relationships with other members as well as individual and team performance. For the team leader, the Survey is to answer questions of his own leadership style and performance evaluation for the team members. For the platoon leader, the Survey is to answer questions of team leader's leadership evaluation and team performance evaluation. Survey will be distributed by Wonho Jeung and will be returned directly to them upon completion by mail using a pre-addressed stamped envelope to return it to research team. After receiving the surveys, we will enter and store the data as an encrypted file on a secure computer using no names – only code numbers. In addition to the survey data, individual soldiers' personal and performance data will be used for analysis. They are rifle shooting, moral strength test, physical test, IQ test, and personality test. You must be 19 years of age or older to participate. Please make sure to complete only the survey that was given to you. Once data are matched and accuracy of data entry is ensured, the original survey will be destroyed. Confidentiality will be strictly maintained and your name will *not* be linked in the data file to your survey responses.

**Benefits and Risks:**

There will not be direct benefits to the participants. But the study might be reflected in the development and training program of army soldiers and officers in the Korean Army that will, in turn, give benefits indirectly to the soldiers and officers in the Korean Army. Participation in this study is not expected to involve any risk greater than those encountered in everyday life. While the survey questions ask your personal beliefs and experiences, your individual responses will be kept strictly confidential

***Confidentiality:***

Surveys will be kept in a locked cabinet at the university office of Dr. Harms. No one other than the UNL research team will have access to the surveys. The information obtained in this study may be published in technical reports or scientific journals and/or presented at scientific meetings. The information will appear in aggregate form and you will not be identified as a participant in this study. No information will be given to the Korean Army without specific request. The information that will be given to the Korean Army upon request will only be in aggregated format.

***Opportunity to Ask Questions:***

Any questions you have regarding this study should be directed to Wonho Jeung at [kmawine@gmail.com](mailto:kmawine@gmail.com) or Dr. Harms at [pharms@unlnotes.unl.edu](mailto:pharms@unlnotes.unl.edu). Sometimes study participants have questions or concerns about their rights. In that case you should call the University of Nebraska-Lincoln Institutional Review Board at (402) 472-6965.

***Freedom to Withdraw:***

Participation is voluntary, and you are free to decide not to participate in this study or to withdraw at any time without adversely affecting your relationship with the Korean Army, the investigators, or the universities that are involved. In addition, you are free to refrain from answering any question that makes you feel uncomfortable. Your decision will not result in any loss of benefits to which you are otherwise entitled.

***Consent, Right to Receive a Copy:***

If you decide to participate, you will be required to check the option on the cover page to indicate you agree with the terms specified in the consent form. You do not need to sign the consent form. You may keep a copy of this consent form for your personal records.

***Name and Contact Information of Investigators***

Dr. Peter Harms, Professor, Department of Management ([pharms@unlnotes.unl.edu](mailto:pharms@unlnotes.unl.edu))

Wonho Jeung, PhD Student, Department of Management ([kmawine@gmail.com](mailto:kmawine@gmail.com)) /  
Major, Republic of Korea Army

## Appendix B

### Survey Instructions (Example)

#### INSTRUCTIONS:

This survey will take about 30-40 minutes to complete. Before you start doing this survey, please first read the consent form distributed to you along with this survey carefully. You shall not complete this survey unless you agree on the terms specified in the consent form. You do not need to sign the consent form. Instead, please sign below on this cover page to indicate that you agree with the terms specified in the consent form.

**There are NO right or wrong answers to these items. All responses are confidential. The success of the research depends on the honesty of responses we obtain from participants like you!**

Once you are finished, please place this survey in a return envelope, seal it and return it to the researchers.

In addition to the survey, your personal data will be used for the study. They are rifle shooting, moral strength test, physical test, IQ test, and personality test. If you agree with sharing your personal and performance data, please check the box below.

**I agree with sharing my personal and performance data.**

**I agree with the terms specified in the consent form**

**Signature** \_\_\_\_\_

If you have any questions, please contact Wonho Jeung.

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**Appendix C**  
**Survey Questionnaires**

**Affective/Identity Motivation to Lead (Chan & Drasgow, 2001)**

Directions: In this section, the statements below describe various aspects of you. For each statement, please decide how much you agree or disagree.

1. I am definitely not a leader by nature (R).
2. Most of the time, I prefer being a leader than a follower when working in a group.
3. I have a tendency to take charge in most groups or teams that I work in.
4. I am the type of person who is not interested to lead others (R).
5. I believe I can contribute more to a group if I am a follower rather than a leader (R).
6. I am the type of person who likes to be in charge of others.
7. I usually want to be the leader in the groups that I work in.
8. I am the type who would actively support a leader but prefers not to be appointed as leader (R).
9. I am seldom reluctant to be the leader of a group.

Note. (R) indicates reverse code items.

**Non-Calculative Motivation to Lead (Chan & Drasgow,2001)**

Direction: In this section, the statements below describe various aspects of you. For each statement, please decide how much you agree or disagree.

1. I would only agree to be a group leader if I know I can benefit from that role (R).
2. If I agree to lead a group I would never expect any advantages of special benefits.
3. I would want to know what's in it for me if I am going to agree to lead a group (R).
4. I am only interested to lead a group if there are clear advantages for me (R).
5. I have more of my own problems to worry about than to be concerned about the rest of the group (R).
6. I will never agree to lead if I cannot see any benefits from accepting that role (R).
7. I never expect to get more privileges if I agree to lead a group.
8. I would agree to lead others even if there are no special rewards or benefits with that role.
9. Leading others is a waste of one's personal time and effort (R).

Note. (R) indicates reverse code items.

**Emotional Intelligence (Wong & Law, 2001)**

Direction: Please read each statement below carefully and choose the one answer that best describes your level of agreement using the scale below

***Self-Emotions Appraisal (SEA)***

1. I have a good sense of why I have certain feelings most of the time.
2. I have good understanding of my own emotions.
3. I really understand what I feel.
4. I always know whether or not I am happy.

***Others-Emotions Appraisal (OEA)***

5. I always know my friends' emotions from their behavior.
6. I am a good observer of others' emotions.
7. I am sensitive to the feelings and emotions of others.
8. I have good understanding of the emotions of people around me.

***Use of Emotion (UOE)***

9. I always set goals for myself and then try my best to achieve them.
10. I always tell myself I am a competent person.
11. I am a self-motivating person.
12. I would always encourage myself to try my best.

***Regulation of Emotion (ROE)***

13. I am able to control my temper so that I can handle difficulties rationally.
14. I am quite capable of controlling my own emotions.
15. I can always calm down quickly when I am very angry.
16. I have good control of my own emotions.



**Big Five Personality Traits (John, Donahue, & Kentle, 1991)**

Direction: In this section, the statements below describe various aspects of yourself. Indicate how you see yourself as someone who...

**Extraversion**

1. is talkative
2. is reserved (R)
3. is full of energy
4. generates a lot of enthusiasm
5. tends to be quiet (R)
6. has an assertive personality
7. is sometimes shy, inhibited (R)
8. is outgoing, sociable

**Neuroticism**

1. is depressed, blue
2. is relaxed, handles stress well (R)
3. can be tense
4. worries a lot
5. is emotionally stable, not easily upset (R)
6. can be moody
7. remains calm in tense situations (R)
8. gets nervous easily

**Conscientiousness**

1. does a thorough job
2. can be somewhat careless (R)
3. is a reliable worker
4. tends to be disorganized (R)
5. tends to be lazy (R)
6. perseveres until the task is finished
7. does things efficiently
8. makes plans and follows through with them
9. is easily distracted (R)

**Openness to Experience**

1. is original, comes up with new ideas
2. is curious about many different things
3. is ingenious, a deep thinker
4. has an active imagination
5. is inventive
6. values artistic, aesthetic experiences
7. prefers work that is routine (R)
8. likes to reflect, play with ideas
9. has few artistic interests (R)
10. is sophisticated in art, music, or literature

**Agreeableness**

1. tends to find fault with others (R)
2. is helpful and unselfish with others
3. starts quarrels with others (R)
4. has a forgiving nature
5. is generally trusting
6. can be cold and aloof (R)
7. is considerate and kind to almost everyone
8. is sometimes rude to others (R)
9. likes to cooperate with others

**Demographic Information**

Direction: This section is about demographic information. Please tell little about yourself.

1. Which unit do you belong to? \_\_\_\_\_
2. What is your age, in years and months? \_\_\_\_\_ Years \_\_\_\_\_ Months
3. Do you have an experience to possess leadership role before you enter the military service?
  - a. Yes
  - b. No

If yes, please specify your experience.

---

4. What is the highest educational degree you have received?
  - a. High School Diploma
  - b. 2-Year College
  - c. 4-Year College
  - d. Masters
  - e. Others \_\_\_\_\_

### Social Status Measures (Time 2, 3 and 4)

Direction: The following is the list of your team members. Please check with  $\checkmark$  if you agree with the question.

Do you go to this person for training-related advice? (e.g., If you have trouble mastering a tactic do you go to this person for advice?)			
e.g.) John Doe	$\checkmark$	e.g.) John Doe	$\checkmark$
Hunter		Tyler	
Gavin		Jake	
Mason		Owen	
Jackson		Max	
Benjamin		Connor	
James		Daniel	
Ryan		Alexander	
Dylan		Lucas	