


2019

# Dark Triad Personality Traits Prediction of Managers' Mind-set in Business Organizations

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*Walden University*

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# Walden University

College of Social and Behavioral Sciences

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Walden University  
2019

Abstract

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by

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MA, Walden University, 2010

BS, Charles University, 2003

MS, Palacky University, 1988

Dissertation Abstract Submitted in Partial Fulfillment  
of the Requirement of the Degree of  
Doctor of Philosophy  
Organizational Psychology

Walden University

May 2019

## Abstract

Presence of the Dark Triad traits of Machiavellianism, narcissism, and psychopathy in the workplace, especially among managers, has received increased attention due to the implications for organizations. One way to influence behavior in business organizations is through controlled interventions to change individual mind-sets. A review of the extant literature indicated that the relationship between Dark Triad traits and mind-set had not been sufficiently examined. A quantitative study was conducted to examine whether a manager's Dark Triad traits predict their mindset. To explore this relationship, a sample of 153 managers' responses was collected online. The Short Dark Triad measure was used to assess participants' Machiavellianism, narcissism, and psychopathy and the Implicit Theory Measure was used to assess mind-set. Regression showed that only Machiavellianism predicts mind-set, accounting for 7% of the variance in mind-set as the criterion variable. The findings indicate that the relationship between Dark Triad traits and mind-set is weaker than a review of the extant psychological literature might suggest. Additionally, this study found that the Dark Triad traits are significantly negatively correlated with manager age, which might provide a new direction for further research. Further research on how and why Dark Triad traits tend to decline with age is recommended. The present study suggests that a better understanding of the relationship between the Dark Triad traits and mind-set and the knowledge that controlled interventions aimed at promoting a growth mind-set are most likely not a useful tool to mitigate the level of Dark Triad psychological traits of managers in business organizations.

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## Chapter 1: Introduction to the Study

### Introduction

Mind-set theory posits that people who believe that important human characteristics can be changed and cultivated over a lifespan have a growth mind-set, whereas those who believe that such characteristics cannot be changed have a fixed mind-set (Dweck, 2000; 2006). It has been found that managers with a growth mind-set tend to be ready to spend their time on developing their subordinates versus those with a fixed one (Heslin, VandeWalle, & Latham, 2006). Consequently, managers with a fixed mind-set have less positive impact on subordinate work-related attitudes and behaviors than those who with a growth mind-set (Heslin & VandeWalle, 2011; Kam, Risavy, Perunovic, & Plant, 2014).

The Dark Triad (DT) is a construct that comprises three distinct, yet conceptually overlapping, personality traits predicting interpersonal harm: Machiavellianism, narcissism, and psychopathy (Jones, 2016; Paulhus & Williams, 2002). Managers with the DT personality traits tend to have negative influence on work-related attitudes and behaviors of their subordinates (Cohen, 2016; Jonason, Slomski, & Partyka, 2012). Cohen (2016) argued that due to counterproductive work behaviors, organizations worldwide lose trillions of dollars. Relative to normal population, individuals with DT personality traits are overrepresented in managerial positions, and they are hard to detect due to having a deceitful and manipulative nature (Babiak, Neumann, & Hare, 2010; Hogan & Kaiser, 2005, Jones, 2016).

## **Background**

Dweck (2000, 2006) pioneered the conceptual work and research on mind-set theory, especially in academic settings. Hesling headed a series of research studies to find out to what extent mind-set theory applies in organizational settings (Heslin, Latham, & VandeWalle, 2005; Heslin & VandeWalle, 2011; Heslin et al., 2006). Heslin et al. (2005) found that managers with a growth mind-set can better acknowledge changes in employee behavior, relative to managers with a fixed mind-set. Heslin et al. (2006) found that managers with a growth mind-set coach their subordinates more often relative to managers with a fixed mind-set. Heslin and VandeWalle (2011) found that managers with a growth mind-set were perceived by employees as more procedurally just, relative to managers with a fixed mind-set. Heslin and VandeWalle (2011) also found that employee perception of procedural justice was a predictor of employees' organizational citizenship behavior. These studies support the argument that a growth mind-set in managers has a positive influence on their own behavior.

Kam et al. (2014) explored how a manager's mind-set formulates an employee's perception of their manager's mind-set. They found that a manager's mind-set predicts how employees formulate their impressions of their manager's mind-set. Kam et al. support the idea that mind-set in managers influences not only their own behaviors, but also the perceptions and behaviors of their subordinates.

Paulhus and Williams (2002) examined the relationships between three socially antagonistic traits: Machiavellianism, psychopathy, and narcissism. In this study, they coined the term *Dark Triad*, which includes these three traits. They defined

Machiavellianism as characterized by a lack of respect for conventional morality, and a belief in the effectiveness of manipulative techniques and strategies while pursuing power. They characterize narcissism as a personality trait that is characterized by an increased sense of one's grandiosity, entitlement, dominance and superiority. Finally, they state that psychopathy as having high impulsivity and low empathy and anxiety. Paulhus and Williams concluded that Machiavellianism, narcissism, and psychopathy represent three distinct, yet conceptually overlapping, personality traits. They found that Machiavellianism, narcissism, and psychopathy are three theoretically distinct, yet empirically overlapping personality traits.

Jones and Figueredo (2013) wanted to identify the factors that Machiavellianism, narcissism, and psychopathy have in common. They found that there were two such factors: callousness and manipulation. Cohen (2016) offered a causal model describing how the DT traits in managers influence counterproductive work behaviors in organizations. Cohen contended that counterproductive work behaviors cost organizations worldwide trillions of dollars. Cohen (2016) argued that even though some researchers consider the DT as a singular trait (i.e., psychopathy), it is more suitable to treat the DT as a multidimensional construct.

Jonason et al. (2012) examined how the DT personality traits predict the use of manipulative tactics in the workplace. They found that Machiavellianism and psychopathy predicted the use of hard manipulative tactics, whereas Machiavellianism and narcissism predicted the use of soft manipulative tactics. Babiak et al.'s (2010) study examined psychopathy and its correlates in managers in business organizations. They

found that psychopathy in managers was positively correlated with the charismatic and presentation style of leadership, but negatively correlated with the measures of responsibility and performance. Grijalva, Harms, Newman, Gaddis, and Fraley (2015) conducted a meta-analytical study to integrate the results of past empirical studies on the effects of narcissism on leadership. They found that narcissism was positively related to leadership emergence (i.e., the capacity of being perceived as a leader by others) and self-reported leadership effectiveness (i.e., one's performance in influencing and guiding activities of one's subordinates toward a common goal), but unrelated to other-reported leadership effectiveness.

Mueller and Dweck (1998) and Brummelman et al. (2015b) provided information on how feedback promotes a fixed mind-set, and narcissism. The purpose of Mueller and Dweck's (1998) study was to examine how different kinds of praise influence one's mind-set. One of their important findings was that a "person praise" (i.e., a praise that focuses on one's stable personal characteristics or traits, rather than on one's effort or strategy to solve a problem) promotes a fixed mind-set. In their study, Brummelman et al. (2015b) wanted to find out whether social learning theory or psychoanalytical theory could better explain the increase of narcissism in Western youth in recent years. They found that narcissism was predicted by parental overvaluation (i.e., praising children as if they were godlike, flawless creatures, by their parents). Both studies provide an early indication that at least two variables from this study (i.e., narcissism and fixed mind-set) might be positively related because they share a common predictor (i.e., person praise).

### **Problem Statement**

Despite the fact that business organizations need to work effectively and profitably, they are losing trillions of dollars yearly due to employee' misbehavior (Association of Certified Fraud Examiners, 2017). This problem has negatively impacted both employees and business owners because employee misbehavior creates a toxic work environment and negatively impacts the ability of business organizations to compete successfully in their markets (Cohen, 2016). A possible cause of this problem is dark (aversive) personality traits (Palmer, Komarraju, Carter, & Karau, 2017; Smith, Wallace, & Jordan, 2016).

Dweck (2006; 2012) stated that individuals who consider important human characteristics malleable have a growth mind-set (*incremental* implicit theory), whereas individuals who consider these characteristics unchangeable have a fixed mind-set (*entity* implicit theory). Researchers found that a growth mind-set in managers correlates statistically significantly and positively with perceived procedural justice, organizational commitment, organizational citizenship behavior, work motivation in employees, and employee performance (Heslin & VandeWalle, 2011; Kam et al., 2014). Heslin et al. (2005) found that a growth mind-set in managers predicts their ability to acknowledge employee behavioral change. Researchers have also found that a growth mind-set in managers predicts their readiness to spend their time on coaching and developing their subordinates (Heslin et al., 2006).

Jonason et al. (2012) found that whereas Machiavellianism and psychopathy were statistically positively correlated with the use of hard tactics (such as threats) to gain



workplace influence, Machiavellianism and narcissism were positively correlated with soft manipulative tactics in the workplace. Babiak et al. (2010) examined a sample of 203 corporate professionals and found that psychopathy was statistically significantly and positively correlated with a charismatic and presentation style of leadership, but it was statistically significantly and negatively correlated with employee perceptions of leader's responsibility as well as performance (i.e., team player, management skills, overall performance). In their meta-analytical study on narcissism and leadership, Grijalva et al. (2015) found that narcissism was statistically significantly and positively correlated with leadership emergence and unrelated to leadership effectiveness. Boddy (2011) studied the relationships between corporate psychopathy in organizational leaders and bullying and unfair supervision in the workplace. He found that there were strong positive correlations between corporate psychopathy and the other two variables.

On a theoretical level, it seemed probable that the DT traits could predict a fixed mind-set. Jones and Figueredo (2013) identified a set of shared features of the DT personality traits (i.e., the Dark Core) that was conceptually consistent with some features of a fixed mind-set (Dweck, 2006; Mueller & Dweck, 1998). However, the relationships between a manager's mind-set and DT had not been sufficiently researched before this study. Understanding the relationships between these two concepts in managers is important, because it might have led to a more integrated model of the dark side of management and leadership (Cohen, 2016).

### **Purpose of Study**

The intent of this quantitative study was to examine whether DT personality traits (i.e., Machiavellianism, psychopathy, and narcissism) in managers relate to their mind-set (ranging from fixed to growth). The goal was to use this information in helping practitioners in organizations to improve HR processes, such as hiring, development, or retention of employees, especially those in the managerial positions.

### **Research Question**

The primary research question to be addressed by this study was: *To what extent do individual Dark Triad personality traits of business organization managers predict their mind-set?*

$H_{01a}$ : Machiavellianism of business organization managers does not predict their mind-set.

$H_{a1a}$ : Machiavellianism of business organization managers predicts their mind-set.

$H_{01b}$ : Narcissism of business organization managers does not predict their mind-set.

$H_{a1b}$ : Narcissism of business organization managers predicts their mind-set.

$H_{01c}$ : Psychopathy of business organization managers does not predict their mind-set.

$H_{a1c}$ : Psychopathy of business organization managers predicts their mind-set.

The secondary research question to be addressed in this study was: *To what extent do Dark Triad personality traits of business organization managers uniquely predict their mind-set?*

$H_{02}$ : Machiavellianism, Narcissism, and/or Psychopathy of business organization managers do not predict their mind-set.

*H<sub>a2</sub>*: Machiavellianism, Narcissism, and/or Psychopathy of business organization managers predict their mind-set.

The tertiary research question to be addressed in this study was: *Do business organization managers' age, tenure, and/or experience predict their mind-set?*

*H<sub>03</sub>*: Business organization managers' age, tenure, and/or experience do not predict their mind-set.

*H<sub>a3</sub>*: Business organization managers' age, tenure, and/or experience predict their mind-set.

### **Theoretical Framework**

The framework of this study was based on mind-set theory and the concept of the DT. As for mind-set theory, it contends that beliefs individuals hold about changeability of important human characteristics influence one's behavior (Dweck, 2000, 2006, 2012). Mind-set is a predictor of one's reaction to adversities and challenging situations, but also of how an individual tends to treat others (Yeager & Dweck, 2012; Yeager et al., 2014). This is especially important in organizational settings. Managers with a growth mind-set tend to interact with their subordinates more effectively than managers with a fixed mind-set (Heslin, 2010; Keating & Heslin, 2015). An important aspect of mind-set theory is that mind-set is understood as a set of an individual's beliefs, and therefore, potentially changeable through psychological interventions (Dweck, 2012; Hesling, 2010; Yeager et al., 2014).

The concept of DT comprises three distinct, yet overlapping socially aversive personality traits (Jonason et al., 2012; Paulhus, & Williams, 2002). Generally, there is a

consensus among scholars that the three personality traits that the DT consists of share a common core (Furnham, Richards, & Paulhus, 2013; Jones & Paulhus, 2014a). Based on their research, Jones and Figueredo (2013) identified Hare's (1991) Factor 1 (manipulation and callousness) as the common factor of the DT. They labeled this common factor as the Dark Core.

The rationale for why DT traits could predict a fixed mind-set was based on the following two assumptions. Firstly, narcissism and a fixed mind-set share one common predictor, a person praise which is a type of positive feedback in which the focus is on an individual's personality traits and characteristics, rather than on an individual's effort or strategies to accomplish a task (Dweck, 2006; Kamins & Dweck, 1999). Secondly, despite being distinct, DT personality traits share some common features (Jones & Figueredo, 2013; Paulhus & Williams, 2002). For example, Jones and Figueredo (2013) identified that DT traits have two characteristics in common, callousness and the tendency to manipulate others. They called these two characteristics the Dark Core. Erdley and Dweck (1999) found that individuals with a fixed mind-set tend to express significantly less empathy toward other people than individuals with a growth mind-set do. Also, Dweck (2006) wrote that individuals with a fixed mind-set are willing to cheat to achieve their goals. Both cheating and the lack of empathy are characteristics that are conceptually consistent with the Dark Core.

### **Nature of the Study**

This quantitative study entailed a cross-sectional, nonexperimental design to explore the relationships between the DT traits and mind-set. Such a design enabled the

study of relationships between variables in terms of strength, direction, and prediction. The variables were mind-set, Machiavellianism, narcissism, and psychopathy (Dweck, Chiu, & Hong, 1995; Jones & Figueredo, 2013). The source of the data was the score achieved by the participants on the Short Dark Triad (SD3) measure which captures the DT traits (Jones & Paulhus, 2014a, 2014b) and the scores on the Implicit Theory Measure (ITM) which measures mind-set (Dweck et al., 1995). Both measurements provided continuous data values. The general population for this study were managers in business organizations in the United States, where “manager” referred to any person who supervised the work of other people in the organization (i.e., assigned and followed up on work of other people who reported the result of their work to this person). The minimum sample size for this study was set at 150 participants (see Chapter 3 for details on the calculation of a minimum sample size).

The data analysis strategy included the Pearson correlation and multiple regression. The Pearson correlation provided information on the strength and the direction of the relationships between respective variables. Since the DT traits share a common core, Furnham et al. (2013) recommended using a multiple regression analysis, in addition to correlations, to examine how the DT traits uniquely predict some dependent variable, which in this study was mind-set.

### **Significance of the Study**

Employing people with the DT personality traits, especially in managerial positions, tends to have negative consequences for organizations (Cohen, 2016; Jones, 2016). Cohen (2016) argued that counterproductive work behaviors cost organizations

worldwide trillions of dollars annually. What makes this problem even more severe is the fact that individuals with the DT personality traits are often hard to detect due to the deceitful nature of their personality and to impression management (Hogan, Curphy, & Hogan, 1994; Jones, 2016). Understanding the relationships between the DT and mind-set could be a possible way to tackle some of these problems.

Unfortunately, a review of the extant literature indicated that some important questions - such as whether people with DT personality traits tended to have a fixed mind-set, whether the DT personality traits could be affected by interventions intended to enhance a growth mind-set, and how these interventions would work - were not sufficiently examined through psychological research. The study has implications positive social change. Understanding the relationships between the DT and mind-set in managers could help practitioners in organizations to improve HR processes, such as hiring, development, or retention of employees, especially those in the managerial positions. For example, if this study determined that the DT traits were correlated positively to a fixed mind-set, organizations could use training programs to develop a growth mind-set to mitigate possible negative effects of the DT traits on managerial practices in managers.

### **Definitions of Terms**

For the purpose of this study the following terms were operationally defined:

*The Dark Triad* is a psychological construct comprising three overlapping, yet distinct personality traits that predict interpersonal harm: Machiavellianism, subclinical narcissism, and subclinical psychopathy (Paulhus & Williams, 2002). The DT traits share

a common core consisting of callousness and manipulation (Jones & Figueredo, 2013). Generally, the three traits represent different forms of callousness and manipulation.

*Machiavellianism* is a strategic form of callousness and manipulation (Jones, 2016). It is characterized by a lack of respect for conventional morality, and a belief in effectiveness of manipulative techniques and strategies while pursuing power and financial gain (Paulhus & Williams, 2002).

*Narcissism* is a grandiose form of callousness and manipulation (Jones, 2016). It is characterized by an increased sense of one's grandiosity, entitlement, dominance and superiority (Paulhus & Williams, 2002).

*Psychopathy* is a reckless form of callousness and manipulation (Jones, 2016). It is characterized by high impulsivity, and low empathy and anxiety (Paulhus & Williams, 2002).

*Mind-set* is an individual's beliefs over malleability of important human characteristics. Mind-set is conceived as a continuum, in which a fixed mind-set and a growth mind-set represent its two polar ends (Dweck, 2006; 2012). The score obtained from the survey measuring mind-set during this study was a continuous one (Dweck, 2000; Dweck et al., 1995). *Fixed mind-set* is an individual's belief that important human characteristics are fixed and not malleable (Dweck, 2012). Fixed mind-set is not conceived as an independent phenomenon, but only as an end on a mind-set continuum (Dweck, 2000). *Growth mind-set* is an individual's belief that important human characteristics are malleable and therefore open to developmental interventions (Dweck,

2012). Growth mind-set is not conceived as an independent phenomenon, but only as an end on a mind-set continuum (Dweck, 2000).

*Manager* is any person who supervises the work of other people in the organization to include assigning and following up on work of other people (Özduran & Tanova, 2017).

### **Assumptions**

First, it was assumed that the participants would complete the survey instruments honestly. Next, it was assumed that the survey instruments used in this study were valid and reliable for the participants in this study. Finally, it was assumed that the survey instruments used in this study were appropriate measures for the population of managers in business organizations.

### **Scope and Limitations**

The scope of this study was limited to managers in business organizations. The main reason for this limitation was that management and leadership practices in business (for-profit) organizations tend to differ from those in public and nonprofit organizations. Therefore, the limitation of the scope to managers in business organizations only was intended to reduce confounding variables that may have been associated with different sectors.

There were limitations connected with self-report surveys. Individuals might have tried to avoid giving frank and accurate responses to survey items due to their impression management. This might have held true, especially with individuals higher in Machiavellianism or fixed mind-set. This problem was addressed through a notice in the



consent form reminding participants that the study included a mechanism (a few questions) to make sure that participants finished the task honestly and completely. Therefore, additional studies are needed to address these limitations.

### **Summary and Transition**

Mind-set influences a manager's behavior, and subsequently, the behavior of their subordinates (Heslin et al., 2005; Wang, Law, Hackett, Wang, & Chen, 2005). The DT personality traits in managers represent a potential problem for any business organization. Little was known about the relationships between the DT and mind-set in managers in business organizations. The purpose of this study was to examine whether the DT personality traits in managers could predict their mind-set. The study was a quantitative study that entailed a cross-sectional, nonexperimental design, which examined the role of Machiavellianism, narcissism and psychopathy personality to predict mind-set. The DT was measured by the SD3 and mind-set was measured with the ITM. The results of the proposed quantitative study could be informative for practitioners in organizations striving to improve their HR processes, especially those related to managerial positions.

Chapter 2 comprises a literature review of psychological theories and research studies pertinent to this study. These include mind-set theory, DT, narcissism, Machiavellianism, and psychopathy. Chapter 3 comprises a description of the research methodology used in the study. It includes a review of the research design, sample population, data collection methods, data analysis, and ethical concerns. Chapter 4 presents the results of the data analysis. It provides information on sample demographics, tests of assumptions, and the results of hypothesis testing. Chapter 5 provides a broad

summary and discusses the limitations of the study, recommendations for further research, and implications for positive social change.

## Chapter 2: Literature Review

### Overview

There has been increasing interest in researching dark personality traits as predictors of performance in organizational settings (Palmer et al., 2017; Smith et al., 2016). Researchers associate dark-side personality traits with unfavorable organizational outcomes, such as counterproductive work behaviors, unethical decision making, and poor performance (Jonason et al., 2012). These outcomes cost organizations worldwide trillions of dollars annually (Association of Certified Fraud Examiners, 2017).

The DT is a concept that occupies a prominent role in the study of dark-side personality traits (Paulhus & Williams, 2002). It is a higher-order construct that consists of three mutually related, yet conceptually distinct personality traits: narcissism, Machiavellianism, and psychopathy (Volmer, Koch, & Göritz, 2016). Despite increased interest, research in the DT is still in its youth. Many questions need to be answered about how the DT relates to other psychological concepts that are important in organizational settings. One of such concepts is that of mind-set (Dweck, 2006).

Dweck (2006, 2012) conceptualized mind-set as an individual's view on the changeability of important human characteristics, such as intelligence or morality. She maintained that mind-set represents the core assumptions of an individual's worldview and creates a basic framework for forming one's judgment and behavioral responses. Dweck also coined new terms: a growth mind-set and a fixed mind-set. People who believe that fundamental human characteristics are changeable have a growth mind-set, whereas those who believe the opposite have a fixed mind-set (Dweck 2006, 2012).

Research of mind-set in organizational settings showed that relative to a fixed mind-set, a growth mind-set correlates more with some positive organizational outcomes (Dweck, 2006; Özduran & Tanova, 2017). These outcomes include, for example, perceived procedural justice, organizational commitment, organizational citizenship behavior, work motivation in employees, and employee performance (Heslin & VandeWalle, 2011; Kam et al, 2014; Kray & Haselhuhn, 2007). Research also found that managers with a growth mind-set tend to be readier to spend their time with their subordinates, compared with their counterparts with a fixed mind-set (Heslin et al., 2006).

One limitation of the extant research is that the relationship between the DT and mind-set has not been sufficiently studied. Understanding this relationship is essential since it can lead to a more integrated model that explains how dark personality traits work in organizational settings. This review of the literature provided a basic insight into what was known about the DT and mind-set and the relationship between these concepts.

### **Literature Search Strategy**

To conduct a literature review for this dissertation, I searched the following databases: PsycINFO, Google Scholar, PsycARTICLES, PsycCRITIQUES, PsycBOOKS, PsycEXTRA, SAGE Premier, SocINDEX with Full Text, Academic Search Complete, Business Source Complete, ProQuest Central, ScienceDirect, Emerald Management, ABI/INFORM Complete and ERIC. The keywords I used included the following: *mind-set*, *Dweck*, *implicit theories*, *implicit person theories*, *implicit intelligence theories*, *DT*, *Machiavellianism*, *psychopathy*, *narcissism*, *dark personality*

*trait, leadership, management, organization, workplace, organizational outcomes, outcomes, and counterproductive work behavior.* Also, I used the reference lists of notable articles to find relevant sources. In searches that included terms consisting of two or more words, I used quotation marks (such as with DT, implicit theories, or implicit person theories). This approach made my searches more specific and accurate.

### **Dark Triad**

The DT is a second-order psychological construct that comprises three mutually correlated, yet conceptually distinct personality traits: narcissism, Machiavellianism, and psychopathy (Paulhus & Williams, 2002). The three traits are considered aversive as they are associated with perceiving other individuals as mere objects to be used for one's own purposes, or, as enemies to be defeated (Jones & Figuerendo, 2013). Narcissism is an aversive personality trait that is characterized by an inflated sense of self-importance, entitlement, and obsessive striving for ego validation (Paulhus & Williams, 2002). Machiavellianism is an aversive personality trait that involves calculating, and long-term strategic planning (Paulhus & Williams, 2002). Psychopathy is an aversive personality trait that is associated with a tendency to immediate gratification, and deficiencies in impulse control (Paulhus & Williams, 2002).

Initially, each of the three traits was conceived and studied separately. Raskin and Hall (1979) used the definition of narcissistic personality disorder from the Diagnostic and Statistical Manual of Mental Disorders to design a measure of "normal" (subclinical) narcissism. They called this measure the Narcissistic Personality Inventory (NPI). In Raskin and Hall's conception of narcissism, the main components of this personality trait

included an exaggerated sense of self-importance (grandiosity) and exploitative entitlement (Raskin & Hall, 1979).

Christie and Gais (1970) were the first to introduce Machiavellianism as a measurable construct into the personality literature. They based their work on the analysis of writings of a medieval politician Niccolo Machiavelli and conceived Machiavellianism as a psychological construct with two primary components: cynical worldview and manipulative tactics (Christie & Gais, 1970). Later, Jones and Paulhus (2009) reviewed Christie's and Gais's concept of Machiavellianism and concluded that Machiavellianism needs also include features described by a Chinese strategist Sun Tzu, namely those of strategic planning, coalition building, and impression management. Jones and Paulhus (2009) maintained that these features need to be explicitly associated with Machiavellianism so that Machiavellianism is not confused with psychopathy, which is associated with impulsive and openly hostile behavior.

Cleckley (1941) was the first to introduce psychopathy into the modern psychological literature, and he identified two principal features of psychopathy: deficiencies in impulse control and callousness. However, it was Hare (1980), who pioneered psychopathy as a measurable construct and started to measure it empirically. He developed the Psychopathy Checklist, which initially comprised two primary components of psychopathy: the affective deficit and the erratic lifestyle, which included impulsive and antisocial behavior.

Even though the psychological constructs of Machiavellianism, narcissism, and psychopathy were developed and studied separately, over time, researchers started to

notice similarities between the three traits (Gustafson & Ritzer, 1995; McHoskey, Worzel, & Szyarto, 1998). Gustafson and Ritzer (1995) conducted two studies with 214 (60% females), and 367 (70% females) undergraduate students, respectively. They studied a construct of aberrant self-promotion, which included features of both psychopathy and narcissism. Gustafson and Ritzer (1995) found that there was a positive correlation between psychopathy and narcissism. McHoskey et al. (1998) conducted a series of four studies with 99 (72% females), 125 (73% females), 48 (65% females), 107 (60% females) undergraduate students, respectively, to explore the relationship between Machiavellianism and psychopathy. They found that the two constructs were positively correlated.

The fact that the constructs of narcissism, Machiavellianism, and psychopathy, were mutually inter-correlated raised a question to what extent the three traits are identical or unique (Paulhus & Williams, 2002). Some researchers argued that the three traits were in principle identical and that the existence of different constructs (i.e., those of Machiavellianism, narcissism, and psychopathy) was caused by the fact that a single phenomenon was studied by different groups of professionals in different social contexts (McHoskey et al., 1998). For example, McHoskey et al. (1998) argued that Machiavellianism and psychopathy are not two different traits, but that they are just two psychological constructs studying the same phenomenon, namely that of psychopathy. They asserted that whereas the measure of Machiavellianism that they used (the Mach-IV) measured psychopathy globally, the measure of psychopathy measured specific

aspects of psychopathy, namely primary and secondary psychopathy, i.e., Factor 1 and Factor 2 of Hare's Psychopathy Checklist-Revised (PCL-R).

McHoskey et al. (1998) held that the constructs of Machiavellianism and psychopathy were developed by different groups of researchers in different social environments. They argued that the construct of Machiavellianism was conceived by researchers in the field of social and personality psychology and tested on university population. As for the construct of psychopathy, McHoskey et al. maintained that it was originated by clinicians while working with less intelligent individuals with antisocial behavior. Thus, McHoskey et al. believed that Machiavellianism is just a form of psychopathy in more intelligent and successful individuals.

Paulhus and Williams (2002) believed that the three traits are not identical, and they concluded that despite some common features, Machiavellianism, narcissism, and psychopathy represented three distinct personality traits. They used a sample of 245 undergraduate students (65% female) to respond to a set of questionnaires, which included measures of the DT, the Big Five, cognitive ability, and self-enhancement. Paulhus and Williams found that the inter-correlation between the DT traits ranged between .25 (for Machiavellianism and narcissism) and 0.5 (for narcissism and psychopathy). Thus, even though DT traits overlapped significantly, these traits still could not be considered identical. Paulhus and Williams also found that participants that were high on narcissism tended to overestimate their cognitive abilities. This effect was not observed in participants that were high on Machiavellianism or psychopathy. In this



way, the study showed that people high on Machiavellianism or psychopathy were more grounded in reality than those that were high on narcissism (Paulhus & Williams, 2002).

Paulhus and Williams (2002) based on the results of their study, coined the term "DT" as a label for a second-order construct that includes Machiavellianism, narcissism, and psychopathy. Their rationale for creating this new construct was that they wanted to encourage researchers to study the three traits concurrently, rather than in isolation.

Paulhus and Williams argued that in this way it is possible to ascertain a unique contribution of each of the traits to other variables under study. Even though Paulhus and Williams were able to demonstrate that the DT represents three different traits that share some common features, they did not address the question of what specifically these common features were. Subsequently, different authors suggested various characteristics that the three traits might have in common (Jones & Figueredo, 2013).

Jones and Figueredo (2013) conducted two studies to explore why and how the three DT traits overlap. The samples they used in their study consisted of 397 university students (75% females), and 388 adults recruited from Amazon's Mechanical Turk (54% females), respectively. Jones and Figueredo found that the common core that the three DT traits shared was the Hare's Factor 1, which includes callous affect (callousness) and interpersonal manipulation. Jones and Figueredo labeled these two shared features the Dark Core and argued that it was the main factor causing covariance among the three DT traits. They maintained that empathy and honesty were the inverse opposites of callousness and interpersonal manipulation.

Even though all three DT personality traits share callousness and manipulation as their common factor, their motivation and behavioral manifestation can differ (Jonason et al., 2012). For example, Jonason et al. (2012) examined how the DT personality traits predict the use of manipulative tactics in the workplace. In their study, they used an online sample of 419 of participants (65% females). They found psychopathy and Machiavellianism predicted the use of hard manipulative tactics, whereas Machiavellianism and narcissism predicted the use of soft manipulative tactics.

Jones and Paulhus (2017) found that Machiavellianism, narcissism, and psychopathy differed from each other regarding motivation and tactics that were related to dishonest behavior. They conducted a series of five experiments to explore what kind of behavior and motivation was each of the DT traits associated with under different conditions (moderators). Jones and Paulhus used five samples recruited from Amazon's Mechanical Turks: 292 adults (51% females), 441 adults (46% females), 501 adults (51% females), 254 adults (55% females), and 262 adults (59% females). They found that under low-risk conditions all three traits predicted deceitful behavior, however, under high-risk conditions (i.e., a high risk of being caught cheating), only psychopathy predicted deceitful behavior. Further, they determined under the condition of ego-depletion (i.e., participants' ability to use their executive cognitive resources was experimentally lowered) individuals high on Machiavellianism started to resemble in their behavior individuals that were high on psychopathy (i.e., engaging in deceitful behavior even if the probability of being caught cheating was high). Jones and Paulhus also ascertained that both Machiavellianism and psychopathy were associated with

intentional, instrumental lying, while Narcissism was associated with unintentional self-deception. Thus, their research confirmed that despite the common core, the three traits were not the same but differed in their motivation and behavioral tactics.

Some authors pointed out that narcissism was on the rise among Western youth (Brummelman et al., 2015; Twenge, Konrath, Foster, Campbell, & Bushman, 2008; Westerman, Bergman, Bergman, & Daly, 2012). Twenge et al. (2008) conducted a study to explore how narcissism had evolved over the generations of college students in the United States between 1979 and 2006. Their overall sample included 16,475 college students (60% females) in 85 independent samples. Twenge et al. found that narcissism was significantly and positively correlated with year of data collection. More specifically, their study showed that the level of narcissism rose steadily within the respective period (i.e., 1979-2006) and that the mean score for narcissism in a college student in 2006 was by 30% higher than that in the early 1980s. Twenge et al. 2008 coined a new name for this increase of narcissism in recent generations: the narcissism epidemic.

In agreement with Twenge et al. (2008), Westerman et al. (2012) found that the levels of narcissism in undergraduate students were on the rise. Westerman et al. (2012) used a current sample of 536 (42% females) business and psychology undergraduate students to compare their results on the NPI with those achieved by 10 other samples of undergraduate students in 1980s and early 1990s (Raskin & Terry, 1988). They found that the mean score on the NPI in the current sample of students was significantly higher than the mean scores in 8 of the 10 historical samples. Westerman et al. (2012) also found that in the current generation sample the business students had significantly higher mean

score of narcissism than the psychology students, even when the authors controlled the effect of other variables, such as gender. They also found that business students were more materialistically oriented (career, salary) than psychology students.

Some scholars, however, insisted that there was no such thing as a narcissism epidemic and that the current generation of young people did not differ from those of the past (Trzesniewski, Donnellan, & Robins, 2008). Trzesniewski et al. (2008) conducted a research study that contradicted the findings of Twenge et al. (2008). As for their sampling strategy, the authors used a selection from historical samples of undergraduate students from two University of California (UC) campuses: UC Davis and UC Berkeley. The number of students that were included in the total sample was 25,849 (66% females). Their study did not show any significant differences in narcissism between generations. Thus, Trzesniewski et al. (2008) concluded that the claim that there was the narcissism epidemic in the contemporary young generation was doubtful.

Twenge (2013) criticized Trzesniewski et al. (2008) study by pointing out that the focal study on the relationship between generation and narcissism was confounded by campus and time. In their study, Trzesniewski et al. (2008) used the 1982 and 1996 samples from UC Berkeley, but the 2002-2007 samples from UC Davis. Twenge pointed out that students from UC Davis were lower on narcissism than students from UC Berkeley. Thus, using the samples from UC Davis for later periods compensated the increase in narcissism over time (Twenge, 2013).

In their recent study, Wetzel et al. (2017) also concluded that their study findings contradicted the assertion of the existence of the narcissism epidemic in the current

generations of youth. However, their study suffered from similar methodological flaws as the study of Trzesniewski et al. (2008), which compromised their study findings. Wetzel et al. (2017) used historical samples of students from the same two campuses of the University of California as Trzesniewski et al. did (i.e., UC Berkeley and UC Davis). In a similar fashion as Trzesniewski et al., Wetzel et al. used older samples (i.e., from the 1990s) of students from UC Berkeley, but more recent samples from UC Davis. In this way, their study results were confounded by campus. It brings into question why some researchers used the same data sets and applied the same flawed methodology on these data sets repeatedly to support their claim that the narcissism epidemic did not exist (Trzesniewski et al., 2008; Twenge, 2013, Wetzel et al., 2017).

Brummelman et al. (2015b) agreed with the assertion that narcissism was on the rise among Western youth and conducted a longitudinal study to explore the origins of this phenomenon. They used two theoretical perspectives to form their hypotheses: social learning theory, which held that narcissism was predicted by parental overvaluation, and psychoanalytic theory that held that increased narcissism could be explained by lack of parental warmth (Brummelman et al., 2015b). They collected a sample of 565 children (aged 7-11 years) and their parents (415 mothers and 290 fathers) to assess how parental overvaluation and lack of parental warmth could predict narcissism and self-esteem in children. Brummelman et al. (2015b) found that parental overvaluation predicted narcissism, but not self-esteem and that parental warmth predicted self-esteem in children, but not narcissism.

The DT was conceived as a personality trait model, in which traits are considered as personal characteristics that are relatively stable over time (Paulhus & Wilson, 2002). Traits can be caused by two basic categories of factors: environmental or hereditary ones. The model of the DT includes no assumptions on to which extent each of the traits is predicated on nature or nurture (Paulhus & Wilson, 2002). The stability of each trait is assumed as given, however, from a practical point of view, the knowledge about to what extent a particular trait is determined by environmental and biological factors might be important. This is because the more a particular trait is determined by environmental factors, rather than biological factors, the greater room there is for influencing the value of this trait by possible interventions (Paulhus & Wilson, 2002).

Vernon, Villani, Vickers, and Harris (2008) conducted a study to explore to what extent the DT traits are attributable to genetic and environmental factors. They collected a sample of 139 pairs of twins (75 pairs were monozygotic consisting of 58 female pairs and 17 male pairs; 64 pairs were dizygotic consisting of 50 female and 14 male pairs). Vernon et al. found that the majority of the variance in narcissism and psychopathy can be attributed to genetic factors (59% and 64% respectively) and non-shared environmental factors (41% and 32% respectively). As for Machiavellianism, in comparison to narcissism and psychopathy, genetic and nonshared environmental factors play a smaller role in the explanation of the variance (31% and 30% respectively). Also, 39% of the variance in Machiavellianism can be attributed to shared environmental factors (i.e., mostly family: parents, siblings, neighbors).

### **Theory of Mind-Set**

Dweck (2006) in her theory of mind-set stated that individuals who consider important human characteristics malleable have a growth mind-set (incremental implicit theory), whereas individuals who consider these characteristics unchangeable have a fixed mind-set (entity implicit theory). The beliefs about the malleability of human characteristics have profound consequences for an individual's ability to cope with hardships and failures in an achievement motivation context (Heslin & Keating, 2016; Yeager et al., 2014). Based on their experience, individuals shape their core beliefs on causal processes in their environment, which help them interpret and react to things and events occurring around them (Yeager, Trzesniewski, & Dweck, 2013). Thus, a mind-set represents a psychological evaluative framework that guides an individual's sense-making process and behavior, especially in challenging situations (Dweck, 2008). Individuals with a growth mind-set tend to attribute one's failures and setbacks to factors that are changeable and in one's power, such as one's effort, used strategy, or knowledge, whereas individuals with a fixed mind-set tend to attribute one's failures and setbacks to unchangeable factors, such as innate abilities or talent (Yeager & Dweck, 2012; Yeager et al., 2014).

Successful coping with challenging situations requires resilience, striving for learning new skills, knowledge, and strategies, willingness to learn from one's mistakes and feedback from others (Brown, 2015, Yeager et al., 2014). People with different mind-sets see important situational characteristics differently, set different goals, focus their striving on different things, and choose different strategies as well (Dweck, 2012; Howell

& Buro, 2009). In the context of situations that require effective coping with challenges, hardships, and failures a growth mind-set is considered an adaptive personal characteristic, whereas a fixed mind-set is considered a maladaptive characteristic (Hochanadel & Finamore, 2015; Yeager et al., 2014).

Individuals with a growth mind-set perceive a possible failure as something that informs them that they need to improve their effort, skills, knowledge, or strategy, and tend to consider a challenging situation as an opportunity to learn something new to develop their coping strategies (Dweck, 2006). For these people, learning and training are important activities that help them develop one's capability to achieve results (Duckworth, Peterson, Matthews, & Kelly, 2007). They also actively search for feedback, both positive and negative, since they believe that feedback is a tool that helps them learn and improve (Dweck, 2000, 2006). As for goals that people with a growth mind-set tend to set for themselves, these are goals that focus on learning (Haimovitz & Dweck, 2016; Keating & Hesling, 2015).

Individuals with a fixed mind-set tend to consider their performance as the validation of their (fixed) abilities and personal worth and regard a challenging situation as a threat that needs to be avoided (Dweck & Leggett, 1988). This is because individuals with a fixed mind-set believe that a possible failure would expose their (fixed, inborn) flaws and insufficiencies (Dweck, 2000, 2006). As for spending their effort on learning and training, they consider such activities to be just a waste of time since they believe that important human characteristics cannot be cultivated (Yeager et al., 2014). They consider exerting more effort or striving to learn something new to be an



acknowledgment of one's (fixed) insufficiency and weakness (Dweck, 2006; Yeager et al., 2011). Also, individuals with a fixed mind-set tend to avoid negative feedback, as they consider negative information about their performance, skills, and abilities to be a threat to their worth (Dweck, 2006; Haimovitz, Wormington, & Corpus, 2011).

In organizational settings, mind-set can play an important role in the ability of business organizations and their people to cope with challenges in a business environment that is characterized by high competitiveness and volatility (Dweck, 2012). For example, one of the most important factors that determine a business organization's ability to use its potential and cope with its environment is the ability to achieve high work engagement of its employees (Heslin, 2010; Li, Sanders, & Frenkel, 2012). According to social exchange theory, people tend to reciprocate the behaviors of others (Cropanzano & Mitchell, 2005; Emerson, 1976). When supervisors strive to deal with their subordinates in a fair, sensible and considerate manner, they tend to respond in kind and tend to be more engaged in work they do (Agarwal, Datta, Blake-Beard, & Bhargava, 2012; Li, Sanders, & Frenkel, 2012).

Supervisors with a growth mind-set tend to have higher quality exchanges with their subordinates than do supervisors with a fixed mind-set (Keating & Heslin, 2015; Wang et al., 2005). This is because supervisors with a growth mind-set consider the skills, abilities, and other important characteristics of their subordinates to be malleable and, therefore, it makes sense to them to spend their time on training and developing their subordinates (Heslin et al., 2006). On the other hand, supervisors with a fixed mind-set see no sense in such activities, since they believe that the abilities and capabilities of their

subordinates are basically fixed and therefore unchangeable through training and development efforts (Heslin et al., 2006). Thus, supervisors with a fixed mind-set do not use their time on higher quality exchanges with their subordinates, which are necessary for creating an environment conducive to employee engagement (Keating & Heslin, 2015; Wang et al., 2005).

Heslin et al. (2005) in a series of four studies found that a growth mind-set in managers predicted their ability to acknowledge employee behavioral change. The total sample they used in their study consisted of 270 participants (82 women, 188 men), and all of the participants were managers from business organizations and MBA students. They determined the ability to accurately notice and acknowledge changes in employee's behavior was a prerequisite for a supervisor's ability to engage in higher quality exchanges with one's subordinates.

Heslin et al. (2006) conducted a series of three studies to explore the relationship between mind-set in managers and their readiness to spend their time on coaching and developing their people. They collected a total sample of 357 participants (43% women, 57% men). Heslin et al. found that mind-set in managers predicted their readiness to coach and develop their people. Namely, managers with a growth mind-set, relative to managers with a fixed mind-set, were ready to spend their time helping their subordinates to learn and develop (Heslin et al.).

Heslin and VandeWalle (2011) did a study on whether mind-set in managers could predict procedural justice in employees. They collected a sample of 92 matched manager-employee dyads. In their research, Heslin and VandeWalle found that a growth

mind-set in managers predicted perceived procedural justice in employees, which was operationalized as employee's perception that a manager provided them with a procedurally just performance appraisal. Another finding in their study was that a growth mind-set in managers predicted employee's organizational commitment and organizational citizenship behavior.

Kam et al. (2014) wanted to determine whether employees are aware of a manager's mind-set and, possibly, whether this awareness affects employees' readiness to exert more effort to improve their work. The researchers collected two samples of participants, the first sample consisted of 102 psychology students (76 females, 26 males), and the other sample consisted of 69 subordinates (15 females, 54 males) of a mid-sized engineering company in Canada. Their study showed that subordinates created and shared a common intragroup perception of a manager's mind-set, and that perception was linked to employees' outcomes such as their motivation to improve their work, turnover intention, and job satisfaction. An important finding of this study was that subordinates' attitudes to work, improvement and other important outcomes were predicated on their shared common intragroup perception of their manager's mind-set, rather than on their mind-sets (Kam et al.). This indicates that managers' mind-set contributes to the formation of group norms and perceptions and is instrumental in employee motivation and behavior (Kam et al.).

An important aspect of the theory of mind-set is that a mind-set is understood as a set of an individual's beliefs that are relatively stable, yet changeable (Dweck, 2012). One of the ways how to change mind-set is through psychological interventions (Yeager et al.,

2013; Yeager & Dweck, 2012). According to Heslin (2010) such interventions can include the following: a) providing participants with information about neuropsychological research on malleability of human brain, b) counter-attitudinal reflections during which participants are encouraged to think about specific examples of situations when they thought they could not develop their abilities or learn new skills, but eventually they did, or c) counter-attitudinal advocacy during which participants are asked to write a letter to some other person giving reasons and evidence why they can change and develop their abilities, skills, and knowledge.

In some studies, researchers successfully used intervention intended to enhance a growth mind-set in study participants (Blackwell, Trzesniewski, & Dweck, 2007). Blackwell et al. (2007) used such an intervention to find whether mind-set can predict mathematics achievements in 7th graders. In their second study, they collected a sample of 99 seventh-grade students of a secondary school in New York (49 females, and 50 males) and assigned them randomly into the experimental and control group, respectively. Then, both the groups received an eight-session training intervention. For the experimental group, this intervention consisted of two sessions on a growth mind-set (i.e., that intelligence can be improved through learning and effort) and six sessions on study skill. The control group learned only about study skills. Blackwell et al. (2007) found that while the students in the control group continued in the normative decline of their grades, the students in the experimental group were able to reverse a negative trajectory of their grades into a positive one.

Dweck (2012) held that mind-set is an integral part of an individual's personality and is relatively stable over time, yet malleable. She conceptualized mind-set as a set of beliefs an individual may hold regarding important human characteristics (such as intelligence or character, for example) can be changed (Dweck 2006). As it is possible to change one's beliefs, it follows that it is possible to change one's mind-set. In this respect, Dweck took a definite position in the nature vs nurture debate over the character of human personality. Even if she does not deny that there are some parts of personality that are inborn, she believes that a large part of it can be formed and cultivated (Dweck, 2012). One's mind-set belongs to this category.

Dweck (2012) asserted that one way of changing one's mind-set is through controlled interventions. Dweck and her colleagues conducted a number of experimental studies using controlled interventions to change mind-set in individuals from different social groups, such as students, adversary groups in Middle East, or different racial groups (Carr, Dweck, & Pauker, 2012; Halperin, Russell, Trzesniewski, Gross, & Dweck, 2011; Yeager & Walton, 2011). The studies indicated that controlled interventions can help to change mind-set in individuals and have not only a temporary effect but also a long-term one.

Until this study there was no study that would explore whether people with aversive personality traits tended to have a certain kind of mind-set, and whether mind-set in people that were high on the DT traits could be changed as successfully as in people that were lower on these traits. Studies on the heritability of the DT traits showed that a large part of these traits was hereditary (Vermon et al., 2007). What was not so

clear, however, was the question whether and possibly to what extent the non-hereditary part of these traits could be modified through mind-set interventions.

### **Dark Triad Personality Traits and Fixed Mind-Sets**

Both the DT personality traits and a fixed mind-set are considered to be psychological concepts that describe maladaptive personal characteristics, with negative consequences at any level of analysis: intrapersonal, interpersonal, group, organizational, and societal (Blackwell et al., 2007; Kamins & Dweck, 1999). Despite this basis commonality (i.e., maladaptiveness) and the importance to study and understand these concepts and their relationship, there were no study that would explore directly how the DT and a fixed mind-set relate. Yet, there were some studies that suggested, albeit indirectly, that there could be some common base among DT personality traits and a fixed mind-set (Brummelman et al., 2015a; Jones & Paulhus, 2017; Mueller & Dweck, 1998; Tasa & Bell, 2017). Areas in which common ground could occur included the following: praising, manipulation, empathy, aggression, and deceit.

#### **Praising**

Praising is a variable that can predict both narcissism and a fixed mind-set, which holds true especially with praising that is aimed at personal characteristics (person praise) rather than at one's effort and strategies that one used (process praise) (Brummelman et al., 2015a; Mueller & Dweck, 1998). As for mind-set, person praise or feedback tend to enhance a fixed mind-set, whereas process praise tends to enhance a growth mind-set (Mueller & Dweck, 1998; Kamins & Dweck, 1998). Mueller and Dweck (1998) conducted an early study exploring the effects of different kinds of praise on mind-set.

They carried out a series of experiments with fifth graders and found that praise for intelligence (person praise) increased fixed mind-set in fifth-grade children and subsequently had negative consequences for children's motivation and academic performance. Kamins and Dweck (1999) found a similar effect of praise and feedback on mind-set in preschool children, whereas person praise and feedback tended to foster a fixed mind-set, process praise and feedback fostered a growth mind-set. Both Mueller and Dweck's, and Kamins and Dweck's studies were conducted in laboratory conditions and showed that person praise was a predictor of a fixed mind-set in younger children.

Even though studies conducted in laboratory settings were consistent in finding that different kinds of praise (process vs. person) enhanced different mind-sets (growth vs. fixed), some recent studies in natural settings confirmed these conclusions only partially (Gunderson et al., 2013, 2017). Gunderson et al. (2013) collected a sample of 53 children (24 girls and 29 boys) and their primary caregivers to explore the relationship between praise and mind-set in natural interactions at home. Gunderson et al. found that whereas process praise that the children (aged one to three years) received from their caregivers predicted a growth mind-set in the same children five years later, person praise had no significant effect on children's mind-set.

Gunderson et al. (2017) was an extension of Gunderson et al. (2013) study. Gunderson et al. (2017) used the same sample as Gunderson et al. (2013). They found that children that received process praise from their primary caregivers as toddlers had better results regarding academic achievement eight years later (i.e., as 4th graders) in comparison to the rest of the sample.

There is a body of research that shows that person praise can also predict narcissism in young people (Brummelman et al., 2015a, 2015b; Twenge et al., 2008). In one of the studies on the effects of the self-esteem movement on society, Twenge et al., (2008) used a sample of 16,475 American college students between the years 1979 and 2006 and found that there was a positive correlation between year of data collection and narcissism in college students. Brummelman et al. (2015b) conducted a longitudinal study exploring the origins of narcissism in late childhood. They collected a sample of 565 children of ages 7 to 12 and their parents (415 mothers and 290 fathers) to test two hypotheses. Their first hypothesis was based on social learning theory assumed that narcissism was enhanced by the parental overvaluation of their children, as children learn their attitudes from their parents. Their second hypothesis was based on psychoanalytic theory assumed that narcissism in children is enhanced by lack of parental warmth since children strive to compensate for the missing warmth by their inflated view of themselves. Brummelman et al. (2015b) found that narcissism in late childhood was enhanced by parental overvaluation and not by lack of parental warmth.

Brummelman et al. (2015a) described six separate studies that aimed at the validation of their newly developed Parental Overvaluation Scale (POS) and also their research on how parental overvaluation relates to parenting beliefs and practices. They defined parental overvaluation as a parents' belief that their child is more special and entitled than other children. Brummelman et al. (2015a) research showed that parental overvaluation is especially frequent in narcissistic parents. Parental overvaluation was positively correlated with the frequency of praise. The praise stemming from



overvaluation took a form of personal praise, where parents praised their children as being extraordinarily knowledgeable and intelligent (Brummelman et al., 2015a).

### **Deceit**

In psychological literature deceitful behavior has been regularly associated with callousness (or lack of empathy) which is also a core characteristic shared by the DT (Brown et al., 2010; Giammarco & Vernon, 2015; Jones & Figueredo, 2013). There have been a number of studies confirming that the DT traits are associated with deceitful behaviors (Baughman, Jonason, Lyons, & Vernon, 2014; Jones, 2013; Jones & Paulhus, 2017). Most recently, Jones and Paulhus (2017), explored the relationship between the three personality traits of the DT (narcissism, Machiavellianism, and psychopathy) and deceitful behaviors under various circumstances. They found that whereas the three traits do share a general tendency to cheat, they differ from each other in how this general tendency manifests itself under various conditions.

A tendency to deceitful behavior is also associated with a fixed mind-set (Dweck, 2006; Tasa & Bell, 2017). Dweck (2006) maintained that in an achievement situation, individuals with a fixed mind-set contemplate cheating as a possible strategy to their success. She argued that this is because these individuals believe that their abilities are fixed and cannot be improved through increased effort or learning and cheating, therefore, is a possible way to succeed for them when they see no other way to achieve success.

Tasa and Bell (2017) conducted three studies to examine the relationship between mind-set, moral disengagement, and ethical beliefs and behaviors in negotiators. They

used a total sample of 168 participants (60 % males) enrolled in a workshop on negotiation. Tesa and Bell (2017) found in their study that people with a fixed mind-set tended to use unethical tactics in negotiations. Corrion et al. (2010) examined the relationship between mind-set and judgment of cheating acceptability in a physical education context in middle-school students in France. They collected a sample of 477 middle-school students (278 males, 199 females) to study this relationship. Corrion et al. (2010) found that a fixed mind-set predicted judgment of cheating acceptability. This relationship was mediated by performance-approach and performance-avoidance goals (Corrion et al., 2010).

### **Aggression**

Even though aggression is not in the heart of the DT, aggression is indeed associated with the DT traits (Marcus, Preszler, & Zeigler-Hill, 2018; Reidy, Zeichner, & Seibert, 2011; Twenge & Campbell, 2003). Callousness and interpersonal manipulation (i.e., dishonesty), the two traits that form the core of the DT, might, but do not have to, be expressed through aggression (Jones & Figueredo, 2013; Jones & Neria, 2015). Based on their research, Jones and Neria (2015) insisted that a common DT factor predicted a common aggression factor. However, they also found that each of the DT traits related in a unique way to different features of aggression. Whereas psychopathy and Machiavellianism were positively related to different aspects of dispositional aggression (psychopathy to physical aggression, Machiavellianism to hostility), narcissism was correlated negatively (Jones & Neria, 2015).

A possible explanation why psychopathy and Machiavellianism were positively related to situational aggression, while narcissism was not, can be found in Pailing, Boon, and Egan (2014) study. When exploring how the DT trait related to violence, Pailing et al. (2014) found that both Machiavellianism and psychopathy were negatively loaded on HEXACO's domains of honesty-humility and agreeableness. However, narcissism was loaded on a different factor, namely extraversion. It also might explain why narcissists are triggered by situational factors (i.e., when they feel that their ego was threatened) rather than dispositional factors (Jones & Paulhus, 2010). Machiavellians tend to have a hostile and cynical worldview, but, in contrast to psychopaths, they can control their impulses (Paulhus & Williams, 2002). Narcissists do not tend to have a hostile worldview, but they are prone to aggress under perceived ego threats (Bushman, Bonacci, Van Dijk, & Baumeister, 2003). Psychopaths tend to use both provoked and unprovoked physical aggression (Jones & Neria, 2015; Reidy et al., 2011).

Researchers also studied how aggression relates to a person's mind-set (Chen, DeWall, Poon, & Chen, 2012; Yeager, Miu, Powers, & Dweck, 2013). Dweck (2012) held that mind-set is a mental framework through which information from the social environment is interpreted and evaluated, and therefore people with a growth mind-set react differently to certain social situations than people with a fixed mind-set. Some studies showed that individuals with a fixed mind-set tend to react more aggressively in some different social contexts than people with a growth mind-set (Halperin et al., 2011; Yeager, Trzesniewski et al., 2013).

Yeager, Miu et al. (2013) examined the relationship between mind-set and the hostile attribution bias in adolescents aged 13 to 15. The hostile attribution bias is a propensity to interpret behaviors of other people as intentionally hostile, even when their intentions are unclear and possibly benign. In the psychological literature, the hostile attribution bias is considered a predictor of the desire for vengeance (i.e., to use reactive aggression) (Dodge, 2006; Wilson & Lipsey, 2006). Yeager, Miu et al. (2013) conducted three independent studies in which they collected the total sample of 1226 students from the United States. They found that a fixed mind-set had a causal relationship to the hostile attribution bias, which predicted a desire for vengeance in adolescent students. The hostile attribution bias in students was reduced through interventions in which students learned a growth mind-set.

Chen et al. (2012) wanted to study what role a mind-set plays in university students' reaction to ostracism. They hypothesized that students with a fixed mind-set would tend to react more aggressively to ostracism relative to students with a growth mind-set. Chen et al. (2012) tested their hypothesis in three experimental studies with a total sample consisting of 207 students (67 men) from the University of Hong Kong. Their findings supported their hypothesis, as they found that a fixed mind-set in students predicted aggressive responses to ostracism. Thus, Chen et al. (2012) concluded that a mind-set in students moderates their aggressive responses to ostracism. In a similar study with 230 students aged 14-16 in the United States, Yeager, Trzesniewski et al. (2013) found that teaching students a growth mind-set reduced students' aggression in response to victimization and exclusion.

Halperin et al. (2011) found that interventions that taught a growth mind-set could reduce long-standing hostilities and negative attitudes between adversary groups. In their study, they conducted a survey and three quasi-experiments with Israeli Jews and Palestinians. Halperin et al. (2011) collected the total sample of 668 participants, out of which were 576 Jews and the rest (112) were Palestinians. The authors found that even in the situation of a prolonged conflict, beliefs about one's adversary can be changed and thus reduced one's tendency for hostile and aggressive behavior. More specifically, Halperin et al. (2011) confirmed that interventions that promoted a growth mind-set in participants increased their readiness to compromise with outgroup members.

### **Summary and Transition**

Apart from some other negative outcomes, employees with aversive psychological traits cost business organizations worldwide trillions of dollars each year. It is therefore essential for organizations to deal with this issue to mitigate possible damages. Currently, there is an increased interest in psychological literature to explore aversive psychological traits and the mechanisms in which they influence daily functioning in organizational settings.

The DT concept occupies a prominent place in psychological research of aversive psychological traits. Despite the effort, the research on the DT is still in its infancy. There is a need to understand better how the concept of the DT relates to other relevant and useful concepts. One of these concepts is Dweck's mind-set. Research on mind-set showed that it is possible to change mind-set in individuals through planned interventions and thus modify maladaptive behaviors in individuals. Currently, there is practically no

research that would describe whether and how the concepts of the DT and mind-set relate to each other. This study addressed this gap in the psychological literature and aimed to explore possible connections between the concepts of the DT and mind-set in organizational settings. It could open the door for further research exploring whether controlled interventions aimed at changing one's mind-set could also affect behaviors associated with the DT traits.

Chapter 3 describes methods that were used during the study. This chapter also includes information on research's design, target population, sampling, data collection, and data analysis. Chapter 4 presents the results of the data analysis and provides information on sample demographics, tests of assumptions, and the results of hypothesis testing. Chapter 5 provides summary and also discusses the limitations of the study, recommendations for further research, and implications for positive social change.

## Chapter 3: Research Method

### Overview

Chapter 3 presents a description of research methods and the sample that was used in this study. It provides a general overview of the study, followed by a description of the targeted participants and the estimated sample size. Next, the procedure and measurement instruments to collect the data are characterized. The data analysis procedures are then presented.

### Research Design and Approach

The study employed a cross-sectional survey design to assess the relationships between DT personality traits and the mind-set of business organization managers. Both simple and multiple regression were used to explore the relationship between the predictor variables of narcissism, Machiavellianism, and psychopathy as assessed by the Short Dark Triad (SD3) measure, and the criterion variable of mind-set as measured by the Implicit Theory Measure (ITM). The study also examined the relationship between the demographic characteristics of the participants and the criterion variable of mind-set.

In this study, using a survey design enabled making inferences about phenomena that could not be directly observed (Groves et al., 2011, p. 40). Narcissism, Machiavellianism, psychopathy, and mind-set are psychological characteristics that are not open to direct observation. Therefore, they were operationalized as the scores on the associated measurement tools. The measures are described later in this chapter.

### **Research Questions and Hypotheses**

The primary research question to be addressed by this study was: *To what extent do individual Dark Triad personality traits of business organization managers predict their mind-set?*

$H_{01a}$ : Machiavellianism of business organization managers as assessed by the SD3 measure does not predict their mind-set as assessed by the ITM.

$H_{a1a}$ : Machiavellianism of business organization managers as assessed by the SD3 measure predicts their mind-set as assessed by the ITM.

$H_{01b}$ : Narcissism of business organization managers as assessed by the SD3 measure does not predict their mind-set as assessed by the ITM.

$H_{a1b}$ : Narcissism of business organization managers as assessed by the SD3 measure predicts their mind-set as assessed by the ITM.

$H_{01c}$ : Psychopathy of business organization managers as assessed by the SD3 measure does not predict their mind-set as assessed by the ITM.

$H_{a1c}$ : Psychopathy of business organization managers as assessed by the SD3 measure predicts their mind-set as assessed by the ITM.

The secondary research question to be addressed in this study was: *To what extent do Dark Triad personality traits of business organization managers uniquely predict their mind-set?*

$H_{02}$ : Machiavellianism, Narcissism, and/or Psychopathy of business organization managers as assessed by the SD3 measure do not predict their mind-set as assessed by the ITM.



*H<sub>a2</sub>*: Machiavellianism, Narcissism, and/or Psychopathy of business organization managers as assessed by the SD3 measure predict their mind-set as assessed by the ITM.

The tertiary research question to be addressed in this study was: *Do business organization managers' age, tenure, and/or experience predict their mind-set?*

*H<sub>03</sub>*: Business organization managers' age, tenure, and/or experience do not predict their mind-set as assessed by the ITM.

*H<sub>a3</sub>*: Business organization managers' age, tenure, and/or experience predict their mind-set as assessed by the ITM.

## **Participants**

### **Target Population**

The target population was a specific subset of people who were registered as workers in Amazon's Mechanical Turk crowdsourcing platform. Amazon's Mechanical Turk (MTurk) specializes in recruiting people online for brief and fast computerized tasks (Chandler, Mueller, & Paolacci, 2014). Over the last decade, MTurk has become a popular data source in psychological research, because it provides researchers with easy access to a large and diverse pool of participants that enables them to conduct their research in an efficient and cost-effective manner (Cheung, Burns, Sinclair, & Sliter, 2017). The specific subset of the MTurk workers that used in my research study were MTurk workers from the United States employed in a managerial position in a business organization.

As for the size of the target population, this information can be inferred from the following data. The total MTurk workforce consists of over 500,000 workers, out of whom approximately 57% are from the United States (i.e., 285,000; Paolacci & Chandler, 2014; Ross, Irani, Silberman, Zaldivar, & Tomlinson, 2010). Based on their study, in which they used a sample of 3,451 MTurk workers, Taggart, Stritch, and Bozeman (2015) ascertained that 59% of MTurk workers reported working for an organization, while 19% of these workers reported working in a managerial position. Taggart et al. (2015) further reported that 66% of MTurk workers who worked for an organization worked in a business organization. This means that there were approximately 21,000 MTurk workers (i.e., approximately 4.2% of the total MTurk workforce) who fit the criteria for the target population as defined for my research study.

This target population was chosen since the MTurk platform enabled access to a large and diverse population in an effective manner regarding time, cost and efficiency (Stritch et al., 2017). Using the MTurk platform enabled access to an English speaking population without having to travel abroad. Another benefit was that by using MTurk population, it was possible to prevent some ethical issues such as confidentiality, security, the voluntary nature of the study, and as mentioned previously, language issues (Stritch et al., 2017).

The population of managers from the United States was chosen so that it was possible to use measurement instruments that were in English. The potential cost of conducting this study with this particular population through the MTurk platform was that the generalizability of the study might be limited. Even though the MTurk population

is large and diverse, it is not representative of the general population since MTurk workers are people who are Internet users, and tend to be younger, overeducated, more liberal, and less religious than the general population (Paolacci & Chandler, 2014).

### **Sampling Strategy**

The proposed study employed a convenience sampling approach to select my research sample. The main reason for using convenience sampling was the overall philosophy and functioning of MTurk platform. Probability sampling requires for each member of the target population a known and non-zero chance of being selected and also, researchers need to be able to gain direct access to all of the population members (Daniel, 2012, p. 66-68). These conditions are impossible to achieve when doing research through MTurk since MTurk does not enable researchers to get a list of individual members of a selected target population to contact them directly. Instead, researchers can access individual members of their target population only indirectly through their offerings published by the MTurk platform. Thus, the decision based on which concrete individuals will be selected as study participants and how this selection will be done does not lie with researchers. Researchers can address only those members of the target population, who will read their offering and researchers cannot even decide which of those individuals who have read their offering will be selected for the study. Daniel (2012, pp. 67-68) suggested that convenience sampling is preferable over probability sampling when it is difficult to gain access to all of the population members, and when resources (in terms of money and time) are limited. This was the case in this study as well. When using the

MTurk platform for the data collection purposes, there is no other option for researchers left but to use convenience sampling.

There were two ways how I could influence the sample size and its composition. Firstly, it was through the definition of the criteria for the target population. Secondly, it was the amount of financial compensation for a worker for the task completion. I defined the inclusion criteria for the target population as mentioned above: the US workers, working in a managerial position in a business organization. These criteria limited the number of responses that I got, however, the population was still large enough that it was reasonable to expect to get over a hundred responses at least. One limitation of convenience sampling is that it may not be representative of the whole population. Another limitation of convenience sampling is that the possibility to make statistical inferences regarding the whole population is limited (Daniel, 2012, p. 68).

### **Sample Size**

As I intended to use multiple linear regression to analyze the data, I used G\*Power program (version 3.1.9.2) to determine the minimum sample size for multiple linear regression. The input parameters that I used for the calculation in the program were the following: two tails, an effect size of .15, a  $p < .05$  error, and a .8 power. As for the number of predictors, I used six in the calculation. This number was based on the fact that even though none of the planned analysis involved more than three predictors, there was still a possibility that all three DT predictors and all three demographic predictors would be significant, which would have meant that a composite follow-on could involve six predictors. Based on this calculation, the necessary sample size was 97. However, for

practical purposes, it was necessary to recruit a larger sample than just 97 people due to various factors that might have made the final sample smaller. For example, some participants might have not filled in the instruments properly, some participants might have refused to complete the instruments, and some participants might have dropped out for various reasons. Therefore, the initial sample size needed to be larger. Thus, the number was set to, 150 participants.

### **Instruments**

The measurement instruments that were used in this study comprise the Short Dark Triad (SD3) and the Implicit Theory Measure (ITM). The SD3 consists of 27 items, whereas the ITM consists of 9 items. The total number of items for both measures is 38. Both instruments were to be completed in one session with no breaks.

#### **Short Dark Triad**

Machiavellianism, narcissism, and psychopathy were measured on the SD3 (Jones & Paulhus, 2014b). It is a 27-item proxy measure, with nine items for each of the traits. The measure uses a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The SD3 was constructed by Jones and Paulhus (2014a), who reported on their effort to concurrently validate the SD3 against the standard DT measures (i.e., cross-validation). The standard measures included the 64-item Self-Report Psychopathy Scale, the 20-item Mach-IV, and the 40-item NPI. They used a sample of 230 adults from Canada and the United States recruited online from Amazon's Mechanical Turks. SD3 had alpha .76 for Machiavellianism, .73 for psychopathy, and .78 for narcissism. As for

the convergent validity correlations of SD3 subscales with the standard measures, it was .68 for Machiavellianism, .78 for psychopathy, and .70 for narcissism.

Maples, Lamkin, and Miller (2014) conducted a study to assess efficiency and validity of two brief measures of the DT (i.e., SD3 and the Dirty Dozen [DD]) in relation to more established measures of individual DT traits. They used a sample of 287 adults recruited online from Amazon's Mechanical Turks. SD3 had alpha .79 for narcissism, .81 for psychopathy, and .85 for Machiavellianism. The convergent validity correlations with well-established measures of individual DT traits were significantly higher for SD3 than for DD (i.e., .84 for SD3 psychopathy vs .70 for DD psychopathy, .74 for SD3 Machiavellianism vs .63 for DD Machiavellianism, and .72 for SD3 narcissism vs. .37 for DD narcissism). Both SD3 and DD were more efficient in terms of time than more established measures of the DT traits.

The main strengths of the measure include the following: (a) it measures all three DT traits in one instrument, (b) the measure is relatively brief (27 items altogether), and (c) the brevity of the measure does not come at the expense of its reliability and validity (Jones & Paulhus, 2014a; Maples et al., 2014). A possible limitation of SD3 is that it has lower construct validity than the standard measures (Jones & Paulhus, 2014a). However, in contrast to the standard measures SD3 is a brief (27 items vs. 124 items) and unified measure (i.e., it measures all three DT traits with one instrument).

### **Implicit Theory Measure**

Participants' mind-set was measured on the ITM (Dweck, 2000; Dweck et al., 1995). In its basic form, it is a 9-point measure, assessing an individual's mind-set from

three different perspectives: intelligence, morality, and person. The measure uses a 5-point Likert scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). In this measure, mind-set is called implicit theory, as Dweck started to use the term mind-set only in 2000's (Dweck, 2006).

Dweck et al. (1995) presented data from six studies intended to examine reliability and validity of the measure. The number of participants used in the six studies ranged from 32 to 184. Unfortunately, the authors did not provide any details on demographics of the participants in terms of their age, gender, education, occupation, or ethnicity. Even though it is difficult to ascertain the age of the participants, it is highly probable that at least two studies were conducted with adult participants, since they correlated mind-set with political affiliation of the participants. As for Cronbach's alpha, it ranged between .94 to .96 for the implicit theory of intelligence, .85 to .94 for the implicit theory of morality, and .90 to .96 for implicit person theory. The studies showed that the ITM was independent of gender, age, political affiliation, and religion. As for discriminant validity, the measure was independent of the measures of cognitive ability, confidence in intellectual ability, and self-esteem. There was a modest but significant relationship between the implicit theory of intelligence and a belief in internal control. Dweck et al. (1995) concluded that despite its brevity, the instrument is a reliable and valid measure of mind-set.

Levy, Stroessner, and Dweck (1998) conducted five experiments to explore the relationship between mind-set and social stereotyping. The participants to the studies were undergraduate students of psychology. The number of students who took part in the

five studies ranged from 78 to 155. Cronbach's alpha ranged from .88 to .93. The studies showed that people with fixed mind-set tend to form more stereotypical trait judgments relative to people with growth mind-set. The strength of the measure is that it is relatively brief (9 items), yet it is a reliable and valid measure of mind-set. The weakness of validation studies was that the authors did not provide more specific information on demographics of the participants.

### **Data Collection**

The data were collected in an online format using the MTurk platform. The two instruments were hosted on Survey Monkey as well as a short demographic questionnaire to characterize the sample and to provide age, education, and experience stat for analysis (See Appendix A). The TurkPrime platform, an online service intended to help social science researchers make MTurk more flexible and ensure that data collection meets the standards required for academic research was also used. Data collection took several hours after the survey had been launched on the Internet to MTurk workers who met the criteria for participation. On average, it took the participant seven minutes to complete the survey. The time limit for completing the survey was 32 minutes, which met a generally accepted standard that for an online survey the time limit should be three or four times longer than the average time needed for its completion (TurkPrime, 2019). 164 participants started to take the survey, out of those 153 completed the survey successfully. As for the participants who did not complete the survey, most of them quit within the first minute (seven out of 11). Three participants quit within several minutes. Only one participant dropped out for not completing the survey within the time limit, but



this participant stopped responding after having completed only the first 14 items of the survey. The data from 153 participants who completed the survey were used for the analysis.

### **Data Analysis**

I used SPSS to analyze the data. As for descriptive statistics, this included means and standard deviations for each of the variables under study. As for inferential statistics, this included calculation of a correlation between each of the predictor variables and the criterion variable, and multiple regression. Multiple regression was used to find out which DT personality traits uniquely predicted the criterion variable (i.e., mind-set).

Furnham et al. (2013) recommended using multiple regression when examining possible influences of DT traits on other variables. The main reason for this recommendation is that even though narcissism, Machiavellianism, and psychopathy represent three distinct traits, they still share a common core. Thus, multiple regression can help to determine a unique influence of respective traits of DT on the criterion variable of mind-set. There were several assumptions regarding the variables used in the analysis that needed to be met. If these assumptions were not fulfilled, the results of the analysis might be misleading, and validity of the study compromised (Ballance, n.d.). The main assumptions were the following: linearity, independence of errors, homoscedasticity, multicollinearity, and normality (Ballance, n.d.; Osborne & Watters, 2002). Before I conducted the multiple regression analysis, I made sure that these assumptions were met.

### **Ethical Considerations**

From the ethical point of view, there were no particular issues regarding this research study. The participants were all consenting adults, who could choose quite freely whether they would take part in the study and whether they would finish it or not. The data collection was anonymous since MTurk does not provide researchers with information that could identify a particular individual by their name, email address, date of birth, home address, phone number, employer, etc. Also, possible participants were informed in advance about their compensation, and how long the task was supposed to take. The compensation was considerably higher than a median value paid for similar tasks (Hara et al., 2018). The task itself was rather straightforward and should not have represented any particular issue for the prospective participants since they should have been accustomed to doing simple intellectual tasks online. The data collection took place only after the IRB reviewed and approved the dissertation proposal. The approval number assigned by the IRB to this study was 01-22-19-0074297 with the expiration date January 21, 2020.

### **Summary and Transition**

Chapter 3 has described the research methodology that was used to study the relationships between DT traits and mind-set in managers. It mentioned who the participants were, how they were sampled, and necessary sample size. The chapter also described the instruments that were used to collect the data, how data collection was done, and how the collected data were analyzed. Chapter 4 presents the results of the data analysis and provides information on sample demographics, tests of assumptions, and the

results of hypothesis testing. Chapter 5 provides summary and also discusses the limitations of the study, recommendations for further research, and implications for positive social change.

## Chapter 4: Results

### Introduction

This research examined the relationship between the DT personality traits and mind-set in managers in U.S. business organizations. The focus was on whether Machiavellianism, narcissism, and psychopathy can predict managers' mind-sets, both as an individual and as a group. Further, the study investigated to what extent other variables, such as a manager's age, tenure, and experience, could predict their mind-set. The following research questions (RQs) and corresponding hypotheses were established:

*Primary RQ:* To what extent do individual Dark Triad personality traits of business organization managers predict their mind-set?

*H<sub>01a</sub>:* Machiavellianism of business organization managers as measured by the SD3 measure does not predict their mind-set as measured by the ITM.

*H<sub>a1a</sub>:* Machiavellianism of business organization managers as measured by the SD3 measure predicts their mind-set as measured by the ITM.

*H<sub>01b</sub>:* Narcissism of business organization managers as measured by SD3 measure does not predict their mind-set as measured by the ITM.

*H<sub>a1b</sub>:* Narcissism of business organization managers as measured by the SD3 measure predicts their mind-set as measured by the ITM.

*H<sub>01c</sub>:* Psychopathy of business organization managers as measured by the SD3 measure does not predict their mind-set as measured by the ITM.

*H<sub>a1c</sub>:* Psychopathy of business organization managers as measured by the SD3 measure predicts their mind-set as measured by the ITM.

*Secondary RQ:* To what extent do Dark Triad personality traits of business organization managers uniquely predict their mind-set?

*H<sub>02</sub>:* Machiavellianism, Narcissism, and/or Psychopathy of business organization managers as measured by the SD3 measure do not predict their mind-set as measured by the ITM.

*H<sub>a2</sub>:* Machiavellianism, Narcissism, and/or Psychopathy of business organization managers as measured by the SD3 measure predict their mind-set as measured by the ITM.

*Tertiary RQ:* Do business organization managers' age, tenure, and/or experience predict their mind-set?

*H<sub>03</sub>:* Business organization managers' age, tenure, and/or experience do not predict their mind-set as measured by the ITM.

*H<sub>a3</sub>:* Business organization managers' age, tenure, and/or experience predict their mind-set as measured by the ITM.

Chapter 4 systematically presents the results of the research study. First, it covers the sample demographic information, including age, gender, education, management level, management experience, and tenure. Next, it presents the results of Cronbach's Alpha, which examined the internal consistency of the measures used to collect the data. Then the results of the hypothesis testing are showcased.

### **Sample Demographics**

The sample consisted of 153 participants, 102 male (66.7%) and 51 female (33.3%) participants (see Table1), which is comparable to that reported by U.S.

Department of Labor (DOL, 2015). The DOL's statistics for women in managerial positions is 5.9% higher than for the sample (i.e., 39.2% vs. 33.3%), the reason may be tied to the DOL data including public and non-profit sectors where there are more women managers than in the private sector. Ages ranged from 22 – 72 years, with the mean age of 38.8 years (SD = 9.80). This is 6.6 years lower than the mean those in managerial positions in the U.S. (Data USA, 2019), which fits with the MTurk participant pool being on average younger than the U.S. population (Paolacci & Chandler, 2014).

Table 1

*Sample Demographics (N = 153)*

Variable	Frequency	Percentage
Gender		
Male	102	66.7
Female	51	33.3
Age		
22-29	22	14.4
30-39	71	46.4
40-49	36	23.5
50-59	19	12.4
60-72	5	3.3
Education		
High School/GED	11	7.2
Some College/Associates	49	32.0
College Degree or Greater	93	60.8
Management Level		
Supervisory	49	32.0
Middle	85	55.6
Top	19	12.4
Management Experience		
0-9	93	60.8
10-19	45	29.4
20-30	15	9.8

Table 1 denotes most participants had a college degree (60.8%) or at least some college/associates (32.0%) education level. This is in line with an observation that the

MTurk participant pool is more educated than the general U.S. population (Paolacci & Chandler, 2014). As for management level, a majority of participants stated that they worked in middle management or supervisory positions (i.e., 55.6% and 32.0%, respectively). Years of management experience ranged from less than a year to 30 years, with an average of 9.23 years ( $SD = 6.66$ ).

Table 2 shows the DT trait with the highest mean score was Machiavellianism ( $x=3.13$ ,  $SD=.72$ ), followed by narcissism ( $x=3.03$ ,  $SD=.66$ ) and psychopathy ( $x=2.16$ ,  $SD=.62$ ). As for mind-set, it had a mean of 2.70 and a standard deviation of 1.02.

Table 2

*Descriptive Statistics for the Dark Triad Traits and Mind-Set (N =153)*

Variable	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
Machiavellianism	1.00	4.89	3.13	.72
Narcissism	1.44	5.00	3.03	.66
Psychopathy	1.00	4.11	2.16	.62
Mind-set	1.00	5.00	2.70	1.02

Table 3 presents the calculation of Cronbach's alpha for the measurement scales used to measure DT traits and mind-set. Cronbach's alpha is a measure of internal consistency, and all four scales had sufficiently internal consistency high scores. These results were comparable to those achieved in other studies that used SD3 measure or ITM (Maples et al., 2014; Levy et al., 1998).

Table 3

*Cronbach's Alpha for Dark Triad Traits and Mind-set*

Subscale	Number of Items	Cronbach's $\alpha$
Machiavellianism	9	.83
Narcissism	9	.79
Psychopathy	9	.75
Mind-set	9	.94

Table 4 presents the correlations between the study variables. There was a positive correlation between management experience and tenure ( $r = .72, p < .05$ ). Machiavellianism was the only DT trait correlated to mind-set ( $r = .27, p < .05$ ). All DT traits were inter-correlated, but the strongest was between Machiavellianism and psychopathy ( $r = .58, p < .05$ ). Age and all DT traits had significant negative correlations.

Table 4

*Correlations between Variables*

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Age	-								
2. Gender	.08	-							
3. Education	.01	.09	-						
4. Management Level	.09	.00	.03	-					
5. Experience	.68**	.08	.01	.24**	-				
6. Tenure	.50**	.11	-.02	.24**	.72**	-			
7. Machiavellianism	-.30**	-.18*	-.04	-.01	-.37**	-.26**	-		
8. Narcissism	-.34**	-.10	.04	.03	-.26**	-.20**	.43**	-	
9. Psychopathy	-.33**	-.34**	-.14	-.02	-.31**	-.34**	.58**	.41**	-
10. Mind-set	-.08	.08	-.03	-.15	-.07	-.07	.27**	-.08	.13

Note: \*  $p < .05$  \*\*  $p < .01$

**Tests of Assumptions**

The primary statistical method used to analyze the sample data in this study was linear regression, a statistical method aimed to establish whether changes in one or more variables (independent variables, predictors) can predict changes in another variable (the dependent variable, criterion variable). It comes in two basic forms: a) simple and b)



multiple. In simple linear regression, there is only one independent variable, whereas in multiple linear regression there are two or more independent variables. Using the sample data linear regression strives to establish a regression line that can predict changes in the dependent variable based on changes in independent variables. So linear regression can be used to predict the values of the dependent variable in a sensible way it is necessary that several assumptions are met.

The most critical assumptions for linear regression are those that deal with the relationship between variables (linearity and multicollinearity) a set of assumptions aiming to make sure that the stochastic portion of the regressive model does not systematically influence the prediction of the dependent variable (homoscedasticity, independence of errors, and normality of errors). As for the assumption of linearity, it requires that the relationship between independent variables and the dependent variable is linear. The assumption of multicollinearity relates to multiple linear regression and requires that independent variables are not too much correlated with each other. Homoscedasticity is an assumption that requires that the regressive model have the same amount of variance (error) in the relationship between independent variance and the dependent variance across the values of independent variables. The independence of errors means that errors are random and not correlated with errors that occurred earlier in previous observations. The assumption of normality of errors assumes that residuals (i.e., differences between the predicted and observed values) are random and close to zero.

The sample data were tested to determine whether it met the assumptions for regression analysis, including linearity, multicollinearity, homoscedasticity,

independence of errors, and normality of errors. This ensured the hypotheses related to the three RQs could be addressed using it. The following is the results of the assumption tests for each respective RQ.

### Primary Research Question Assumption Testing

The primary research question was: “To what extent do individual DT personality traits of business organization managers predict their mind-set?” The predictors were Machiavellianism, narcissism, and psychopathy, and the criterion was mind-set. To determine whether the assumption of linearity was met, the scatterplots of the predictors versus criterion values were visually inspected. None of the relationships were non-linear, thus the visual inspection of scatterplots indicated the assumption of linearity was met. As for the assumption of multicollinearity, it does not apply to simple regression models (i.e., with only one independent variable). As the primary RQ hypotheses were tested using simple linear regression, the assumption of multicollinearity was not assessed. The assumption of normality of errors was assessed by a visual inspection P-P plots (see Figures 1, 2, and 3), and indicated that normality was met.

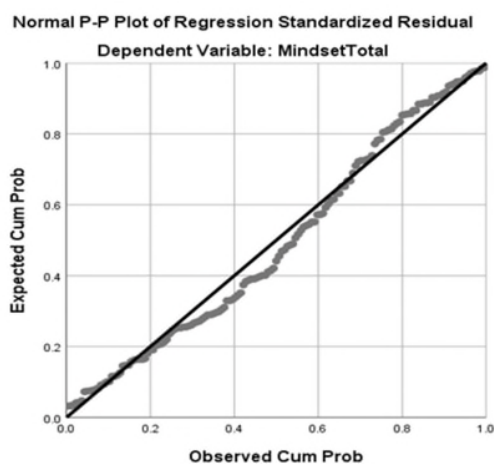


Figure 1. P-P plot for Machiavellianism

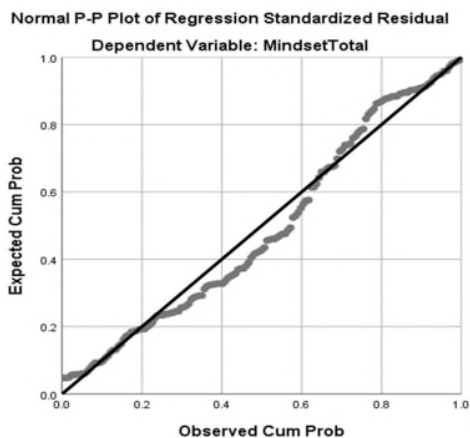


Figure 2. P-P plot for narcissism

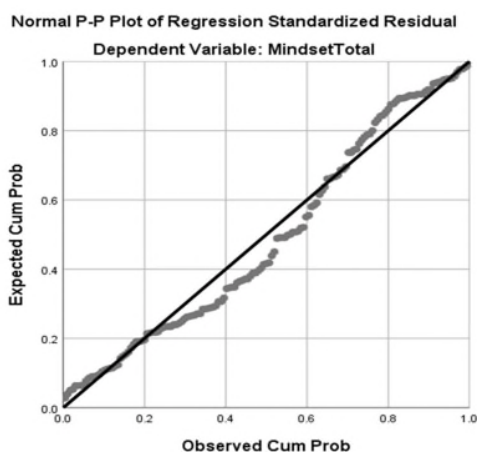


Figure 3. P-P plot for psychopathy

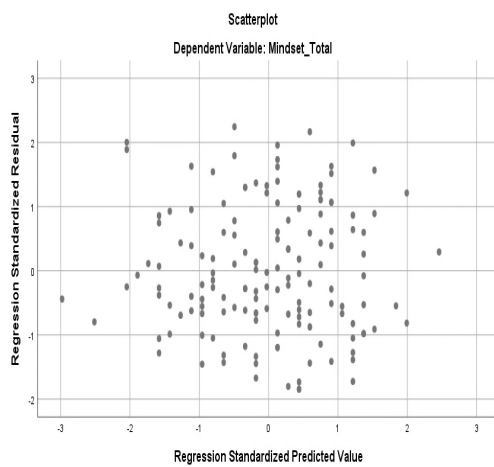
The assumption of independence of errors was tested by using the Durbin-Watson statistic (see Table 5). Garson (2014) wrote that as the rule of thumb the values of the Durbin-Watson statistic should lie in the interval between 1.5 and 2.5 for the data to meet the assumption of the independence of errors. As it is apparent from the results, the sample data met this assumption for each of the three simple linear regression models.

Table 5

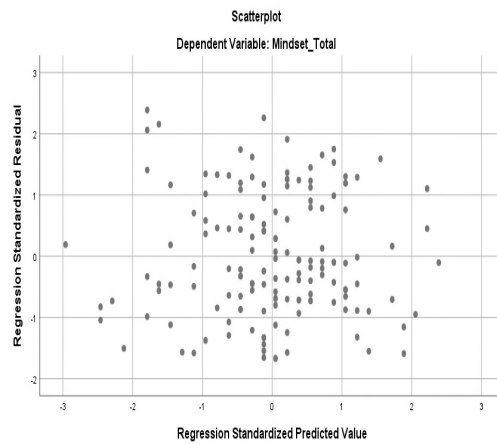
*Durbin-Watson Statistic for Simple Regression*

Variable	<i>Durbin-Watson</i>
Machiavellianism	1.95
Narcissism	2.09
Psychopathy	2.03

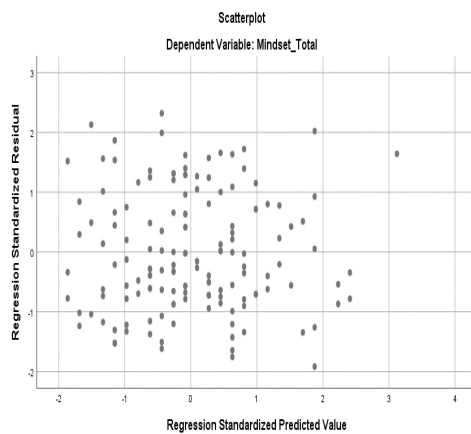
To assess the assumption of homoscedasticity graphs plotting standardized predicted values against standardized residuals obtained were visually inspected (see Figures 4, 5, and 6). As the plots did not show any signs of funneling, the assumption of homoscedasticity was met.



*Figure 4.* Residuals – predicted values plot for Machiavellianism



*Figure 5.* Residuals – predicted value plot for narcissism



*Figure 6.* Residuals – predicted values plot for psychopathy

### **Secondary Research Question Assumption Testing**

The secondary research question was: “To what extent do Dark Triad personality traits of business organization managers uniquely predict their mind-set?” The predictors were Machiavellianism, narcissism, and psychopathy. The criterion was mind-set. The assumption of linearity was checked by visual inspection of the scatterplots of the predictors versus the criterion, which were the same scatterplots as for the primary research question. Once again it was concluded the assumption of linearity was met.

As for the assumption of multicollinearity, this was assessed by the inspection of the correlations between independent variables (see Table 4) and by checking the variance of inflation factors (VIF) statistic (see Table 7). Generally, multicollinearity is present when the correlation between independent variables is at least .8 or stronger (Open University, n.d.). As seen in Table 4, there was no correlation between independent variables .8 or stronger. To pass through the assumption of multicollinearity, the values of VIF needed to be lower than 5 (Minitab Blog Editor, 2013). As can be seen in Table 7, the values of VIF were between 1.29 and 1.61. Thus, the inspection of the correlations of the independent variables with the dependent variable and VIF values indicated that there was no multicollinearity present among independent variables.

To assess the assumption of homoscedasticity a graph plotting standardized predicted values against standardized residuals obtained was visually inspected (see Figure 7). The plot did not show funneling, the assumption of homoscedasticity was met.

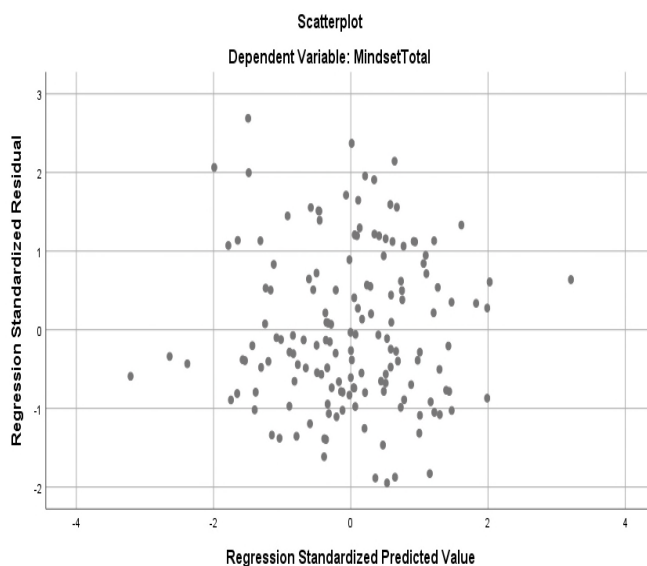


Figure 7. Residuals – predicted values plot for the Dark Triad traits

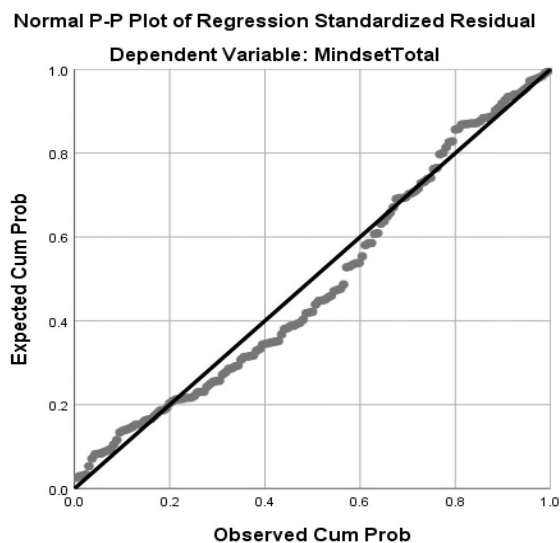


Figure 8. P-P plot of the Dark Triad traits

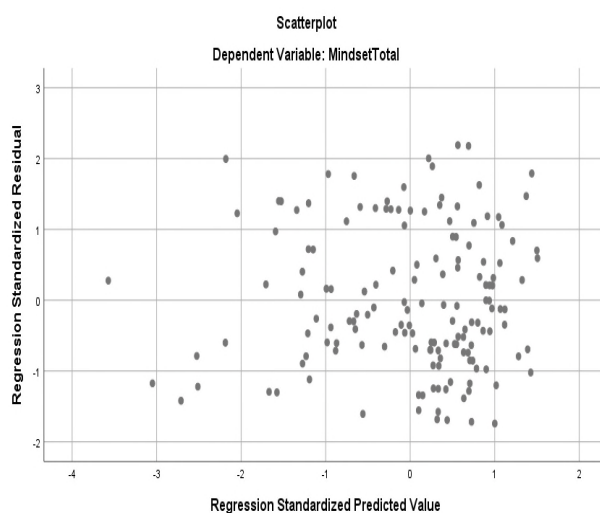
The assumption of independence of errors was tested through the Durbin-Watson statistic (see Table 7). The obtained value of the Durbin-Watson statistic was 1.97 (i.e., close to 2), which means that the assumption was met. The assumption of normality of errors this was tested by visual inspection of the P-P plot for the model (see Figure 8). The visual inspection on the P-P plot indicated that the normality of errors was met.

### **Tertiary Research Question Assumption Testing**

The tertiary research question was: “Do business organization managers’ age, tenure, and/or experience predict their mind-set?” The predictors were age, tenure, and experience. The criterion was mind-set. The assumption of linearity was checked by visual inspection of the scatterplots of the predictors versus the criterion. None of the relationships between them was obviously non-linear. Thus, the visual inspection of scatterplots indicated that the assumption of linearity was met.

The assumption of multicollinearity was assessed by the inspection of the correlations between independent variables (see Table 4) and by checking the VIF statistic (see Table 8). As seen in Table 4, there was no correlation that would be .8 or stronger. The VIF values were between 1.85 and 2.86. Thus, the inspection of both the correlations of the independent variables with the dependent variable and the VIF values indicated that there was no multicollinearity present among independent variables.

The assumption of homoscedasticity was assessed by visual inspection of a graph plotting standardized predicted values against standardized residuals obtained was visually inspected (see Figure 9). The plot did not show any apparent signs of funneling, the assumption of homoscedasticity was met. The assumption of independence of errors was tested through the Durbin-Watson statistic (see Table 8). The obtained value of the Durbin-Watson statistic was 2.03 (i.e., close to 2), which means that the assumption was met. The assumption of normality of errors this was tested by visual inspection of the P-P plot for the model (see Figure 10), and it indicated the assumption was met.



*Figure 9.* Residuals – predicted values plot for age, tenure, and experience



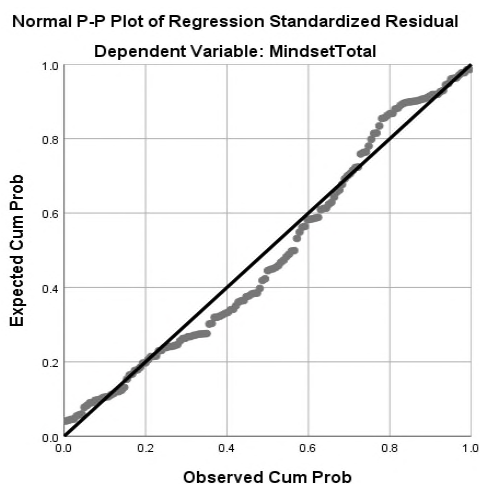


Figure 10. P-P plot of age, tenure, and experience

## Statistical Analysis

### Primary Research Question

*To what extent do individual Dark Triad personality traits of business organization managers predict their mind-set?*

*H<sub>01a</sub>*: Machiavellianism of business organization managers as assessed by the SD3 measure does not predict their mind-set as assessed by the ITM.

*H<sub>a1a</sub>*: Machiavellianism of business organization managers as assessed by the SD3 measure predicts their mind-set as assessed by the ITM.

Simple linear regression was conducted to explore whether Machiavellianism can significantly predict mind-set. The results for Machiavellianism were  $b = .38, [.16, .61], p < .05$ , with 7% of the variability being explained by the model (see Table 6).

Machiavellianism could predict mind-set at a sufficient significance level, thus the null hypothesis for Machiavellianism was rejected, and the alternative hypothesis accepted.

Table 6

*Predictors of Mind-set in Simple Regression Analysis*

Variable	<i>B</i>	<i>p</i>	<i>R</i>	<i>R</i> <sup>2</sup>
Machiavellianism	.38	.001*	.27	.07
Narcissism	-.12	.353	.08	.01
Psychopathy	.21	.113	.13	.02

Note: \*  $p < .05$

*H<sub>01b</sub>*: Narcissism of business organization managers as assessed by the SD3 measure does not predict their mind-set as assessed by the ITM.

*H<sub>a1b</sub>*: Narcissism of business organization managers as assessed by the SD3 measure predicts their mind-set as assessed by the ITM.

Simple linear regression was conducted to explore whether narcissism can significantly predict mind-set. The results for results for narcissism were  $b = -.12$ ,  $[-.36, .13]$ ,  $p = n.s.$  (see Table 6). Narcissism could not predict mind-set at a sufficient level of significance. Thus, the null hypothesis for narcissism was not rejected, and the alternative hypothesis could not be accepted.

*H<sub>01c</sub>*: Psychopathy of business organization managers as assessed by the SD3 measure does not predict their mind-set as assessed by the ITM.

*H<sub>a1c</sub>*: Psychopathy of business organization managers as assessed by the SD3 measure predicts their mind-set as assessed by the ITM.

Simple linear regression was conducted to explore whether psychopathy can significantly predict mind-set. The results for results for psychopathy were  $b = .21$ ,  $[-.05, .47]$ ,  $p = n.s.$  (see Table 6). Psychopathy could not predict mind-set at a sufficient level of

significance. Thus, the null hypothesis for psychopathy was not rejected, and the alternative hypothesis could not be accepted.

### Secondary Research Question

*To what extent do Dark Triad personality traits of business organization managers uniquely predict their mind-set?*

*H<sub>02</sub>: Machiavellianism, Narcissism, and/or Psychopathy of business organization managers as assessed by the SD3 measure do not predict their mind-set as assessed by the ITM.*

*H<sub>a2</sub>: Machiavellianism, Narcissism, and/or Psychopathy of business organization managers as assessed by the SD3 measure predict their mind-set as assessed by the ITM.*

Multiple linear regression was conducted to assess whether Machiavellianism, narcissism, and/or psychopathy could significantly predict mind-set as assessed by the ITM (see Table 7).

Table 7

#### *Regression Analysis of Dark Triad Traits*

Variable	<i>B</i>	<i>p</i>	<i>VIF</i>	<i>Durbin-Watson</i>
Constant	2.13			
Machiavellianism	.52	.000*	1.61	1.97
Narcissism	-.37	.007*	1.29	
Psychopathy	.03	.853	1.57	
<i>R</i> <sup>2</sup>	.12			
<i>F</i>	6.67	.000*		

*Note: \* p < .05*

The results showed that DT personality traits were significant predictors of mind-set,  $F(3,149) = 6.67, p < .05$ , with 12% of the variance being explained by the model. The

results also indicated that while both Machiavellianism ( $b = .52, [.24, .79], p < .05$ ) and narcissism ( $b = -.37, [-.63, -.10], p < .05$ ) contributed significantly to the model, psychopathy did not ( $b = .03, [-.28, .34], p = \text{n.s.}$ ). Thus, the second null hypothesis was rejected, and the alternative hypothesis was accepted.

### **Tertiary Research Question**

*Do business organization managers' age, tenure, and/or experience predict their mind-set?*

$H_{03}$ : Business organization managers' age, tenure, and/or experience do not predict their mind-set as assessed by the ITM.

$H_{a3}$ : Business organization managers' age, tenure, and/or experience predict their mind-set as assessed by the ITM.

Multiple linear regression was conducted to assess whether age, tenure, and/or experience could significantly predict mind-set as assessed by the ITM.

The results (see Table 8) showed that age, tenure, and experience were not significant predictors of mind-set,  $F(3,149) = .38, p = \text{n.s.}$ , with 1% of the variance being explained by the model. The results also indicated that neither age ( $b = -.01, [-.03, .02], p = \text{n.s.}$ ) nor tenure ( $b = -.01, [-.06, .04], p = \text{n.s.}$ ) nor experience ( $b = .00, [-.04, .04], p = \text{n.s.}$ ) contributed significantly to the model. Thus, the third null hypothesis was not rejected, and the alternative hypothesis could not be accepted.

Table 8

*Regression Analysis of Age, Tenure, and Experience*

Variable	<i>B</i>	<i>p</i>	<i>VIF</i>	<i>Durbin-Watson</i>
Constant	2.98			
Age	-.01	.627	1.85	2.03
Tenure	-.01	.683	2.07	
Experience	.00	.989	2.86	
<i>R</i> <sup>2</sup>	.01			
<i>F</i>	0.38	.767		

Note: \*  $p < .05$

### Summary and Transition

As a result of the quantitative analysis, the answers to the research questions were as follows:

For RQ1, only Machiavellianism was a significant predictor of mind-set, when 7% of the variance in the DV was accounted for by Machiavellianism. As Machiavellianism increased, mind-set increased. Therefore, with increased levels of Machiavellianism, higher levels of mind-set (i.e., fixed mind-set) can be expected. The null hypothesis for Machiavellianism as a predictor of mindset was rejected and the alternative hypothesis was accepted. Both narcissism and psychopathy were not significant predictors of mind-set. The null hypotheses for both narcissism and psychopathy were not rejected.

For RQ2, Machiavellianism, narcissism, and/or psychopathy were a significant predictor of mind-set, when 12% of the variance in the DV was explained by Machiavellianism, narcissism, and/or psychopathy. Whereas both Machiavellianism and narcissism contributed significantly to the model, psychopathy did not. As Machiavellianism and narcissism increased, mind-set increased. Thus, with higher levels

of Machiavellianism and narcissism, increased levels of mind-set (i.e., fixed mind-set) can be expected. The null hypothesis was rejected, and the alternative hypothesis was accepted.

For RQ3, age, tenure, and/or experience were not a significant predictor of mind-set. None of the three independent variables contributed significantly to the model. With increased levels of age, tenure, and/or experience there was no significant response in the DV. Therefore, the null hypothesis was not rejected.

Chapter 5 provides summary and also discusses the limitations of the study, recommendations for further research, and implications for positive social change.

## Chapter 5: Discussion, Conclusions, and Recommendations

### **Introduction**

The purpose of this study was to examine the relationship between the DT personality traits (i.e., Machiavellianism, narcissism, and psychopathy) and mind-set of managers from U.S. business organizations. The study sought to investigate whether the DT personality traits predict mind-set in the target population. The goal was to promote social change by enabling practitioners in organizations (especially managers) to use this information to improve HR processes, such as hiring, development, or retention of employees.

To fulfill the purpose, the study was designed as a quantitative one, striving to find whether predictor variables predict the criterion variable. Within this general framework, three specific research questions were formulated. Each of the research questions specified predictor variables and the criterion variable. The criterion variable in all three research questions was mind-set. The research questions differed in terms of their predictor variables. While the primary research question sought to find how each of the DT psychological traits can predict mind-set, the secondary research question asked how well DT personality traits as a whole, predict mind-set. The tertiary research question used some manager demographic variables including age, tenure, and experience as predictors of mind-set.

The target population was managers in U.S. business organizations and MTurk workers was used to secure the sample for analysis. Even though MTurk workers do not cover the entire U.S. population, it is, nevertheless, a large pool of people to choose from,

which is routinely used by social science researchers. This approach enabled data to be collected in a relatively short period (i.e., several hours) a sample of 153 participants. The participants were asked to provide information on their demographic and job-related characteristic, and to respond to a set of 36 Likert-type items that measured their DT personality traits and mind-set. The data were then analyzed using linear regression to answer the three research questions. The key findings from the study follow.

### **Primary Research Question**

To answer the primary RQ, three simple regression models were tested, each with one of the DT personality traits as the predictor variable and mind-set as the criterion variable. Out of the three DT personality traits, as assessed by the SD3 measure, only Machiavellianism significantly predicted mind-set, as assessed by the ITM. The relationship between Machiavellianism and mind-set was weak but significant, and Machiavellianism in the model could explain 7% of the variance in mind-set. The null hypothesis for Machiavellianism was rejected, and the alternative hypothesis was accepted. As for narcissism and psychopathy, the null hypotheses were not rejected, and alternative hypotheses could not be accepted.

### **Secondary Research Question**

To answer the secondary RQ, a multiple regression model was tested with the three DT personality traits as predictor variables and mind-set as the criterion variable. The results showed that the DT personality traits, as assessed by the SD3 measure, were significant predictors of mind-set, as assessed by the ITM. Out of the three DT traits, both Machiavellianism and narcissism contributed significantly to the model, whereas



psychopathy did not. The model could explain 12% of the variance in mind-set. Thus, the null hypothesis was rejected, and the alternative hypothesis was accepted.

### **Tertiary Research Question**

A regression model that used manager age, tenure, and experience captured on a demographic questionnaire as predictors of mind-set, as assessed by the ITM. It showed that manager age, tenure, and experience were not significant predictors of mind-set. None of the predictor variables contributed significantly to the model. Thus, the null hypothesis was not rejected, and the alternative hypothesis could not be accepted.

### **Interpretation of Findings**

This research study explored a somewhat uncharted territory since the relationship between the DT personality traits and mind-set were not sufficiently researched and described in the psychological literature. Generally, the study found that the relationship between the DT traits is rather weak, with Machiavellianism being the only DT trait that could significantly predict mind-set. These findings were rather surprising since the literature review seemed to suggest that the relationship between the DT traits and mind-set could be much stronger than the results of the study indicate. Additionally, the study showed that the DT traits were significantly negatively correlated with age, whereas mind-set was not.

The results regarding the scores of the DT personality traits were comparable to those achieved by other researchers when using the SD3 measure (Jonason, Wee, & Li, 2014; Jones & Pualhus, 2014). This might indicate several things. The measure has good reliability across various populations. The study confirmed findings from previous

studies that men had on average significantly higher scores on a psychopathy scale than women, but the scores on Machiavellianism and narcissism of men were not significantly different from those of women. Also, in accordance with the theory of DT and other empirical studies, all three DT psychological traits were significantly intercorrelated. The correlations ranged from weak to middle, namely, .41 for psychopathy and narcissism, .43 for narcissism and Machiavellianism, to .58 for Machiavellianism and psychopathy. This finding supported the concept of the DT as three overlapping, yet conceptually distinct traits are sharing a common core (Paulhus & Williams, 2002).

The scores of managers in this study were not significantly different from those of the general population. The study did not replicate the findings of some authors, who claimed that the managerial population has on average higher levels of psychopathy than the general population (Babiak et al., 2010; Boddy, 2011; Hogan & Kaiser, 2005). However, the difference in findings can be caused by the fact that whereas authors who found an increased number of psychopaths among managers focused their research on top executives, the sample collected for this study consisted mostly of middle managers (55.6%) and supervisors (32.0%).

As for mind-set, Machiavellianism was the only variable that correlated significantly with mind-set. Moreover, even this only correlation was weak (.27). A theoretical explanation for this correlation can be that one of the features of Machiavellianism is a cynical view of morality that includes a belief that most people can be manipulated. There is an implicit assumption in this belief that the level of intelligence is limited. This is conceptually similar to a fixed-mindset with its assumption that

everyone has a certain level of intelligence that is fixed and cannot be changed. As Machiavellianism, in contrast to narcissism and psychopathy, is associated more with environmental factors (69%), rather than with hereditary factors (31%), it is possible that one learns this belief regarding the manipulability of other from the social interactions during one's lifetime (Vermon et al., 2007).

Machiavellianism was the only predictor variable that could in a simple regression model predict mind-set at a significant level, when it, however, accounted only for 7% of the variability in mind-set. Neither narcissism nor psychopathy could individually predict mind-set. This finding was somewhat surprising since there were some indications in psychological literature suggesting that the DT psychological traits and mind-set might be related. Both the DT personality traits and a fixed mind-set are psychological concepts that describe maladaptive personal characteristics, with negative consequences at all levels of analysis: intrapersonal, interpersonal, group, organizational, and societal (Blackwell et al., 2007; Kamins & Dweck, 1999). There are several concepts in psychological literature that have links to both DT psychological traits and mind-set, such as praising, deceit, and aggression (Brummelman et al., 2015a; Dweck, 2006; Jones & Paulhus, 2017; Marcus et al., 2018; Mueller & Dweck, 1998; Yeager, Miu et al., 2013). Despite these theoretical commonalities that suggested that there might be stronger ties between the DT psychological traits and mind-set, only Machiavellianism showed some weak, yet significant link to mind-set under a single regression model.

The DT psychological traits were a better predictor of mind-set when they were entered together as predictor variables into a multiple regression model. The model could

explain 12% of the variance in mind-set. This might indicate that the DT as a whole rather than individual DT traits can be used as a predictor of mind-set. However, despite this improvement, the relationship between the DT psychological traits and mind-set was rather weak. In the multiple regression model, only Machiavellianism and narcissism contributed significantly to the model.

One of the surprising findings was that all the DT psychological traits were significantly, albeit weakly, negatively correlated with age, whereas there was no significant correlation between age and mind-set. The findings thus indicated that the DT psychological traits might decrease with age. It is not much clear why this might be so. One possible explanation might be the differences in child-rearing practices between generations. Twenge et al. (2008) among others argued that there was a steady rise in narcissism in the American youth due to the changes in child-rearing practices called “the self-esteem movement.” Whether the self-esteem movement could lead to an increase of the other two DT traits (i.e., Machiavellianism and psychopathy) is open to question.

In the psychological literature, a large part of the DT psychological traits is attributed to hereditary factors. However, there is still a significant part that is attributed to environmental factors. Therefore, it also might be the case that the DT traits tend to decrease with age naturally as an individual is confronted with negative consequences of one’s behavioral manifestations of the DT traits in a social environment. Whether the decrease of the DT traits with age is caused by the changes in child-rearing practices (the self-esteem movement) or whether the DT traits decline naturally with age as the result of

an individual's learning from one's confrontation with one's social environment is hard to find through a cross-sectional study, such as this one.

If generational changes in child-rearing practices is a factor leading to the decrease of the level of DT traits with age, there is a question why a similar effect did not occur with mind-set. Dweck (2006; 2010) consistently held that a fixed mindset was enhanced by praising aimed at personal characteristics and skills (person praise) rather than at one's effort and strategies used to solve a task at hand (process praise). The self-esteem movement typically promotes using person praise to enhance a child's self-esteem. Therefore, one would expect that, in accordance with Dweck's theory of mind-set, that a generation of children exposed to a lot of person praise will have higher levels of a fixed mind-set. However, there was not such an effect found in this study. The mind-set did not correlate with age. Neither age, nor tenure, nor managerial experience was significantly correlated with mind-set. Also, a multiple regression model that used age, tenure, and managerial experience as predictor variables, showed that this model could not significantly predict mind-set.

### **Limitations of the Study**

One of the limitations of this research was that it used a convenience sample. This fact limits the study's generalizability. However, to get access to the entire population (i.e., the managers in U.S. business organizations) would be challenging, costly and time-consuming endeavor that would make this study hardly possible. Using MTurk workers as a proxy population is one of the most effective alternatives. The pool of possible participants is large, varied, covers the entire territory of the United States, is readily

accessible in a cost-effective manner. However, one needs to bear in mind that the characteristics of the MTurk population differ from the general U.S. population in some ways. Generally, the MTurk population is younger, more educated, more liberal, less religious, and with immediate access to the Internet (Paolacci & Chandler, 2014). The data collection itself was quick (several hours), with a high completion rate (93% from the participants that started the survey completed it successfully).

Another limitation of the study was its design. The design of the study was non-experimental, cross-sectional. Thus, the study could not answer possible questions regarding causality. Neither correlation, nor prediction imply causation, and therefore cannot be considered as proof of causality between variables.

### **Recommendations**

A possible recommendation based on this study can be to design a study to explore why the level of the DT personality traits declined with age, but mind-set did not. It might be important for both theoreticians and practitioners to understand factor that can mitigate the strength of the DT personality traits or their behavioral manifestations in organizations. This because the DT personality traits generally have more negative consequences for organizations than positive ones. Thus, understanding the factors that influence these aversive traits might bring significant practical benefits to organizations. Ideally, the design of the study should be experimental and longitudinal.

One recommendation could be to explore the effect that different kinds of praise (personal vs process praise) have on individual DT traits. One of the possible explanations for why the level of the DT traits differed with age might be the way that

personal praise, which is typical for the current trends in child rearing, might reinforce DT tendencies in individuals. This phenomenon was observed with narcissism (Brummelman et al., 2015a, 2015b; Twenge et al., 2008). The results of this study indicated that this might be the case with both Machiavellianism and psychopathy as well.

Another recommendation would be to determine if there is a higher level of the occurrence of psychopathy (or Machiavellianism or narcissism) as measured by the Short DT measure among top managers compared to a standard population or other managerial levels (i.e., middle managers, supervisors). Some authors maintained that the occurrence of psychopathy is higher among managers than in the general population. In this study, the levels of the DT traits as measured by the SD3 measure were comparable with those of a general, non-managerial population. However, the number of top executives in the sample was small (19 persons) for making any sensible conclusions regarding this matter.

### **Implications**

There are both practical and theoretical implications of this study. As for the theoretical implications, this study shed some light on the relationships between the DT psychological traits, mind-set, managerial population, and age. As for the practical implications, the study generated some knowledge that can be used by practitioners to guide their decisions regarding people processes in their organizations.

### **Theoretical Implications**

This study explored a previously less researched territory with potentially critical social consequences. Both the DT and mind-set are concepts that are associated with

critical organizational outcomes. It was an aim of this study to find whether there was a link between these two concepts that would enable to design controlled interventions in order to mitigate possible adverse effects of the DT traits in managers in business organizations. This study showed that the link between the DT and mind-set was either weak or insignificant. Naturally, some more research will be needed to confirm or disconfirm these preliminary conclusions. However, changing one's mind-set does not seem to have much effect on their levels of DT personality trait. This study is thus important for psychological theory since it indicated that in order to mitigate the adverse effects of the DT traits of managers in business organizations, it is necessary to look for some other ways and links to other concepts.

Another theoretical implication of this study might be that it found that there might be an unexplored connection between the age of managers and their levels of the DT psychological traits as measured by the Short Dart Triad measure. This study was not capable of exploring the relationship between age and the DT traits more deeply. However, it contributed to bringing this relationship into focus as a potential direction for further research with the aim to find factors that can be used when dealing with the DT traits in managers in business organizations.

This research study brought some empirical evidence to the question, whether the levels of the DT personality traits in a managerial population is different from those in a general population. This study found that the scores for the DT traits were comparable to those found in other studies with a general population (Jones & Paulhus, 2014). However, this conclusion can hardly be generalized to all the managerial levels, since the sample in



this study included only a limited number of top managers when the majority of the participants were middle managers.

Another theoretical implication of this study was that this study found no significant relationship between age and mind-set. What this finding means for the theory of mind-set is difficult to determine. However, at least it showed that older age does not mean a higher probability of any type of mind-set. This finding also underscored a lack of conceptual interconnectedness between the DT traits and mind-set, since all the DT traits are significantly correlated with age, whereas mind-set is not.

### **Practical Implications for Social Change**

As for the practical implications of this study that promote social change, these include enhancement the knowledge of practitioners in business organizations that help them make better decisions influencing the well-being of their organizations and people working in them. One of such practical implications is the knowledge that controlled interventions aimed to promote a growth mind-set are most probably not a very useful tool to mitigate the level of DT psychological traits of managers in business organizations. Practitioners, therefore, have to look for other ways to deal with possible negative ramifications of the DT traits of managers. An optimistic tone of some books by Dweck (2006; 2010) for general public might create an impression in practitioners that changing mind-set through controlled interventions might be the panacea for all the ills in the human resources area. This research study showed that this might not be the case.

The study also indicated that practitioners in business organizations should know that they can expect higher levels of the DT personality traits in younger managers. This

might help them develop a more patient approach to younger managers. The study, however, was not able to bring some more in-depth insight as for what kind of interventions can mitigate the adverse effects of the DT traits of managers. However, at least to adopt a more understanding and patient approach to younger managers might help the practitioner not to get rid of younger managers prematurely.

Even though planned interventions intended to promote mind-set in managers might not be generally very helpful for changing or mitigating the DT traits in managers, it might be useful to try to change one specific belief in managers who demonstrate higher levels of Machiavellianism. Namely, the belief that most people are generally not intelligent enough so that they can be manipulated. This belief seems to be a link, albeit not a strong one, between Machiavellianism and mindset. It seems probable that by changing this particular belief, the level of Machiavellianism could be possibly lowered in a particular person. This is because Machiavellianism, in contrast to narcissism and psychopathy, is more determined by what one learns from one's environment, rather than by hereditary factors (Vermon et al., 2007).

### **Conclusion**

This research study explored the relationship between the DT personality traits and mind-set. It found that out the three DT personality traits (Machiavellianism, narcissism, and psychopathy), only Machiavellianism could significantly predict mind-set in a simple linear regression model. The relationship was weak, however, and Machiavellianism accounted for 7% of the variability in mind-set as the criterion variable. By using a multiple linear regression model, the study found that the DT

personality traits could predict mind-set when the DT traits accounted for 12% of the variance in the mind-set. However, psychopathy did not contribute significantly to the model. The study also tested through a multiple linear regression model, whether age, tenure, and managerial experience could predict mind-set. The model showed that these three variables could not significantly predict mind-set. Apart from these main findings, the study also found that the DT traits were significantly negatively correlated with age and that the levels of the DT traits in managers were comparable to those in the general population.

The study contributed to the understanding of the relationship between two concepts that are associated with essential outcomes in business organizations. Even though the review of psychological literature indicated that the concepts of the DT and mind-set might share substantial overlaps, this study did not affirm such a conclusion. The relationship between the DT traits and mind-set varied from insignificant to weak, which indicates that, from a practical point of view, there is not much sense in trying to influence the DT traits in managers in business organizations through controlled interventions designed to enhance a growth mindset.

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## Appendix A: Questionnaire of Demographic Information

DEMOGRAPHIC QUESTIONNAIRE

Directions: Please fill in or check the following items to best characterize you and your current job in organization

**Demographics**

Age: \_\_\_\_ (Rounded in Years)

Gender (Check one):

Male

Female

Education Level (Check the one that best files you):

Less than High School

High School/GED

Some College/Associates

College Degree or Greater

**Job Information**

Management Level:

Supervisory

Middle Management

Top Management

Managerial Experience: (i.e., time you have spent in supervisory/managerial position(s) managing other people during your lifetime):

Years \_\_\_\_ Months \_\_\_\_

Tenure: (i.e., time you have spent in a supervisory/managerial position(s) in your current organization):

Years \_\_\_\_ Months \_\_\_\_