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EXAMINING TIME PERSPECTIVE: ITS ROLE IN RELATION TO MINDFULNESS, STRESS, AND SELF-CONTROL

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Examining Time Perspective:
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Foreword

Dedicated to myself.

ABSTRACT

Time Perspective can suggest a considerable amount of information about individual habits, behaviors, emotions, and attitude, among many (Zimbardo & Boyd, 1999; Gilbert & Sifers, 2011; Stolarski, Postek, & Bitner, 2014). Recent research is increasingly noticing the association between Time Perspective and mindfulness (Boniwell et al., 2010; Drake et al., 2008). Exploring the benefits of mindfulness continues to expand into area of management and organizational psychology, considering the influence of well-being on stress and work-life balance (Ross & Vasantha, 2014), leadership, (Matthias, Narayanan, & Chaturvedi, 2014), task performance, etc. (Sutcliffe & Vogus, 2016). The presence of mindfulness in stress reduction (Papastamatelou et al., 2015) and self-regulation (Bowlin & Baer, 2012) are significant notions to consider, especially in application towards the organizational context. The aim of this study was to examine the mediating role of Time Perspective (TP) in relation to mindfulness, stress, and self-control. Results explored whether if the five frames of Time Perspective based on Zimbardo's Time Perspective Theory (Zimbardo & Boyd, 1999), Past Positive (PP), Present Hedonistic (PH), Future (F), Past Negative (PN), and Present Fatalistic (PF), with the addition of Balanced Time Perspective (BTP), would account for any variance in stress as well as Self-Control. Survey data analyzed 158 out of 184 participants, which consisted of undergraduate and graduate students from Istanbul Bilgi University. The proposed model was tested through a hierarchical regression as well as a mediation analysis in a multiple mediation analysis. Our findings on the negative association of PN and positive association of F and BTP with mindfulness replicate previous findings. Similar to past research, PH was found to predict overall stress. F and PP time frame were found to predict higher levels of overall stress. PN and F were found to be a mediating mechanisms between mindfulness and overall Stress. PF and BTP played a mediating role between mindfulness and Self-Control, including two of its sub-dimensions (Self-Monitoring and Self-Reinforcing), while the mediation

effect through Future TP was only through overall Self-Control. Some of these findings challenge previous findings between TP, mindfulness and stress while simultaneously stressing the presence of TP between mindfulness and Self-Control.

Keywords: Time Perspective, Mindfulness, Balanced Time Perspective, Stress, Self-Control

ÖZET

Zaman Perspektifi, bireysel alışkanlıklar, davranışlar, duygular ve tutumlar hakkında önemli miktarda bilgi önerebilir (Zimbardo & Boyd, 1999; Gilbert & Sifers, 2011; Stolarski, Postek, & Bitner, 2014). Son zamanlarda yapılan araştırmalar zaman perspektifi ve bilinçli farkındalık arasındaki ilişki ile daha fazla ilgilenmeye başladı (Boniwell et al., 2010; Drake et al., 2008). İyi oluş algısının stres, iyi-yaşam dengesi (Ross & Vasantha, 2014), liderlik (Matthias, Narayanan, & Chaturvedi, 2014) ve iş verim performansının (Sutcliffe & Vogus, 2016) üzerindeki etkisi göz önünde olmaya devam ettikçe, bilinçli farkındalığın yararları, yönetim ve örgütsel psikoloji alanında genişlemeye devam edecektir. Bilinçli farkındalığın stres azaltma (Papastamatelou et al., 2015) ve öz düzenlemedeki (Bowlin & Baer, 2012) varlığı, özellikle örgütsel uygulama açısından önemlidir. Bu çalışmanın amacı, bilinçli farkındalık, stres ve öz denetim arasında ki ilişkide zaman perspektifinin aracı rolüdür. Anket verileri, İstanbul Bilgi Universitesi'nde ki lisans ve yüksek lisans öğrencilerinden 158 katılımcının anketi analiz edilerek oluşturulmuştur. İstatistik analizler, Zimbardo'nun Zaman Perspektif Teorisinde (Zimbardo & Boyd, 1999) yer alan beş farklı Zaman Perspektifinin, Geçmiş Olumlu (PP), Şimdi Hazcı (PH), Gelecek (F), Geçmiş Olumsuz (PN), Şimdi Kaderci (PF) ve Dengeli Zaman Perspektifinin (BTP) stres ve öz denetim ki skorlarını ne derece yordadığını incelemiştir. Önerilen model, hiyerarşik regresyon ve arabuluculuk analizi ile test edilmiştir. Bilinçli farkındalığın, PN skorları ile negatif ayrıca F ve BTP skorları ile positif ilişkilendirilmesi üzerine bulgularımız önceki bulguları yinelemektedir. Geçmişteki araştırmalara benzer şekilde, PH skorları stres skorlarını yordadı. F ve PP skorlarının daha yüksek stres skorları ile ilişkili olduğu bulunmuştur. PN ve F skorlarının, bilinçli farkındalık ve genel stres skorları arasında aracılık rolü istatistiki olarak anlamlı bulundu. PF ve BTP skorları ise, bilinçli farkındalık ve öz denetim skorları arasındaki aracı rolü istatistiki olarak anlamlı bulundu. Ayrıca bu iki zaman perspektifinin, bilinçli farkındalık ve özdenetimin alt boyutlarını

(Kişisel İzleme ve Kişisel Güçlendirme) içeren arabuluculuk rolü de istatistiki olarak anlamlı bulundu. F skorları sadece bilinçli farkındalık ve öz denetim skorları arasındaki aracı rolü bulundu. Bu bulguların bazıları TP, bilinçli farkındalık ve stres arasındaki önceki bulguları sorgularken, bilinçli farkındalık ve öz denetim arasındaki zaman perspektifin varlığının önemini de vurgulamaktadır.

Ana kelimeler: Zaman Perspektifi, Bilinçli Farkındalık, Dengeli Zaman Perspektifi, Stres, Özdenetim

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Abbreviations

TP	Time Perspective
PN	Past Negative
PP	Past Positive
PH	Present Hedonism
PF	Present Fatalism
F	Future
TPT	Time Perspective Theory
BTP	Balanced Time Perspective
DBTP	Deviation from Balanced Time Perspective

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INTRODUCTION

1.1 GENERAL OVERVIEW

The impact of time on the outcome of individual decisions often goes unnoticed. Research regarding the influence of time perspective on various psychological constructs has been on the rise (Bubic, 2015; Droit-Volet, 2016; Molinari, Speltini, Passini & Carelli, 2016). Time perspective (TP) is defined as a dispositional construction of psychological time as a result of cognitive processes that divide individual experiences into five temporal frames which include Past Positive, Past Negative, Present Fatalistic, Present Hedonistic, and Future (Zimbardo & Boyd, 1999). Over multiple decades, studies reveal a wide range of associations linking time perspective to various factors including well-being, life satisfaction, competition and cooperation in social dilemma, learning experiences, and trust, among numerous others (Boniwell, Osin, & Sircova, 2014; Imbellone & Laghi, 2016; Laghi, Pallini, Baumgartner, & Baiocco, 2016; Molinari et al., 2016). Adopting one temporal frame may cause an individual to view all experiences through a biased point of view. For example, an individual grounded on a Future Time Perspective may be fixated only on future goals and achievements and thus struggle to experience the sensitivity of the present. This temporal influence can result from various issues ranging from culture, social class, education and religion, among others (Zimbardo & Boyd, 2008). In an ideal situation, an individual will be capable of adjusting between the different TPs to adapt to the situation according to task, conditions, and resources rather than exhibiting bias towards one specific TP (Zimbardo & Boyd, 1999). The operationalized definition of this flexibility is known as Balanced Time Perspective (BTP), (Boniwell & Osin, 2010; Zhang, Howell, & Stolarski, 2013). BTP has been observed to be related to well-being, intelligence, and decreased stress, among other variables (Olivera-Figueroa, Juster, Morin-Major, Martin, & Lupien, 2015; Stolarski, 2016; Zajenkowski, Stolarski, Maciantowicz, Malesza, & Witowska, 2016). Research also exhibits a clear positive link between

mindfulness and BTP (Drake et al., 2008; Seema, 2014; Seema & Sircova, 2013; Sobol-Kwapinska, Jankowski & Przepiorka, 2016; Stolarski, Vowinckel, Jankowski & Zajenkowski, 2016; Vowinckel, Westerhof, Bohlmeijer, & Webster, 2015; Wiberg, Sircova, Wiberg, & Carelli, 2012). Research suggests that the utilization of mindfulness allows an individual to exercise BTP (Drake et al., 2008; Vowinckel, 2012). The most distinguishing feature of BTP is that it allows the individual to shift focus between time perspectives in order to adhere to the task at hand. Research suggests that mindfulness has features that may be related to the fluid nature of BTP's multicomponent structure (Stolarski et al., 2016). Its aspect of sensitivity to attention is a distinguishable property that is observed to aid temporal balance. Mindfulness plays a key role in the aid of sustaining and modifying direction of attention (Bishop, Lau, Shapiro, Carlson, Anderson, Carmody, Segal, Abbey, Speca, Velting, & Devins, 2004). Raised awareness to attention is just one of the many distinctive features of mindfulness.

There has been a recent rise in the interest towards examining mindfulness (Bao, Xue, & Kong, 2015; Dixon & Overall, 2016; Peters, Eisenlohr-Moul, & Smart, 2016; Quaglia, Braun, Freeman, McDaniel, & Brown, 2016). Recognized by a variety of definitions, it is widely understood as an increase in attention to the present moment of focus and the raising of awareness in a non--judgmental way (Kabat-Zinn, 1994). Baer, Smith, Hopkins, Krietemeyer, & Toney (2006) define the facets of mindfulness through observing, describing, acting with awareness, non-judgment of inner experiences, and nonreactivity to inner experiences. Mindfulness has been shown to be related to mindful engagement, higher life satisfaction, self-esteem, and lower levels of depression, self-consciousness, anger-hostility, and neuroticism (Brown & Ryan, 2003). Mindfulness is also found to be significantly related to reduced stress (Atanes et al., 2015; Baer, Carmody & Hunsinger, 2012; Bao et al., 2015).

Stress is recognized as the degree of stress caused by a particular situation, with the impact of the environment, personal traits, and coping ability (Cohen, Kamarck & Mermelstein, 1983). Stress is a critical variable to the organizational context. The impact of stress in the work environment shows strong positive

associations with burnout, reduced job satisfaction, and lack of organizational commitment (Goddard, O'Brien & Goddard, 2006). Potential sources of stressors in the organizational context may appear through role conflict, role ambiguity, role overload and underload. Regardless of whether the nature of the stress originates from within or outside the professional environment, stress is an internal experience of psychological imbalance that affects behavior (Cummings & DeCotiis, 1973). Increases in mindfulness through a mindfulness-based treatment program correlates significantly with decreases in stress (Branstrom, Duncan, & Moskowitz, 2010; Branstrom, Kvillemo, & Moskowitz, 2013; Gard, Brach, Hotzel, Noggle, Conboy & Lazar, 2012; Nyklicek & Kuijpers, 2008). Self-control and self-regulation are found to be conceptually related to mindfulness (Bowlin & Baer, 2012). Self-control is recognized as the ability to censor instinctive responses to serve a higher goal (Baumeister, Vohs, & Tice, 2007). Research shows that better control and awareness of the current situation derives from an individual's time perspective (Wittmann, Peter, Gutina, Otten, Kohls & Meissner, 2014). Self-control and self-management skills are essential to the development of organizational behavior (Mills, 1983). This is beneficial in leadership roles, especially when there is task uncertainty and role ambiguity. The impact of self-control is exhibited on stress management (Achtziger & Bayer, 2013). Individuals low in self-control are seen to have score lower on academic achievement, well-being, while exhibiting higher chance to display burnout, and participate in work deviance (Restubog, Garcia, Toledano, Amarnani, Tolentino, & Tang, 2011; Zettler, 2011).

While empirical findings have established a relationship between mindfulness and stress, research has suggested a variety of mediating factors which vary from emotional intelligence, self-efficacy, and personality traits (Heidari & Morovati, 2016) to self acceptance (Rodriguez, Xu, Wang & Liu, 2015), to many others. Despite these discoveries, there has been a lack of investigation into the potential mediating aspect of Time Perspective in relation to mindfulness and organizational variables that are suggested in the current study, stress and self-control. Findings show that BTP is highly associated with low

perceived stress (Papastamatelou, Unger, Giotakos, & Athanasiadou, 2015). Research has established that individuals with a BTP profile obtain a higher capability to combat stress shown through psychophysiological evidence (Olivera-Figueroa et al., (2015). This illustrates how stress can be determined through the process and expression of time perspective. At the same time, mindfulness is highly related to BTP as a predictor as well as a characteristic value (Seema & Sircova, 2013). When defining the basis of BTP, Zimbardo & Boyd (2008) clarified that the elements consist of a paired dynamic of intention and awareness to the current moment. Underlying other cognitive processes, BTP embodies a strong sense of conscientiousness toward time and adaptability to the present. Observing the individual ties that Time Perspective and specifically BTP has in relation to mindfulness, Stress, and Self Control, the current study seeks to illuminate further relationships that may be essential to expand this field of research.

CHAPTER 2
LITERATURE REVIEW

2.1 TIME PERSPECTIVE

2.1.1 Development of the Construct and the Definition

The influence of temporal approach exhibits a profound influence over individual behavior. Research on time duration dates back to 1890 where William James introduced the basic foundation for what would form into time perspective theory. Lewin (1943) established focus on the present in relation to the past and the future. Research on time as a measurable variable expanded through various approaches that attempted to evaluate aspects of time perspective through subjective feeling of passed time (Barndt & Johnson, 1955), or estimation of time frame on past or future events (Klineberg, 1968; Lessing, 1972), time pressure, or deadlines (Sonnentag, 2012). Eventually, the focus on time related research grew into observing it as a behavior predicting variable. Time Perspective Theory, which is one of the main focuses of the current study, divides time into five quantifiable categories.Zimbardo & Boyd (1999) drew the model of Time Perspective in an attempt to demonstrate how an unconscious cognitive process may influence personal judgments and responses. This conceptualization of time perspective offered a way to chronologically classify experiences. “Time Perspective is often a non-conscious process whereby the continual flows of personal and social experiences are assigned to temporal categories, or time frames, that help give order, coherence, and meaning to those events” (Zimbardo & Boyd, 1999, p. 1271). This definition was established by the conceptualization of its capacity to be an individual-differences variable. Grounded in the Lewinian interpretation of Time Perspective (TP), Zimbardo & Boyd (1991) drew on Lewin’s model (1951) which defines TP as “the totality of the individual’s views of his psychological future and psychological past existing at a given time” (p. 75)

by expanding TP into multi-dimensional divisions. Additionally, Nuttin (1985) also expressed support for this Lewinian aspect of time as he added that the complexity of the construct can be applied to the past and future perspectives. The definition of TP is recognized as the 'manner in which individuals and cultures partition the flow of human experience into distinct temporal categories of past present and future' (Zimbardo et al 1997). This conceptual division among temporal orientation formulates new area for inference within its domain. The development of this notion expands the capacity of this variable into multiple domains.

2.1.2 Theoretical Framework

By developing the Zimbardo Time Perspective Inventory (ZTPI), Zimbardo and his colleagues were able to explore the the various temporal frames in a more systematic manner. The scale is comprised of five subscales which include Past Positive, Present Hedonistic, Past Negative, Future and Present Fatalistic. The Past Negative (PN) temporal frame is when the individual indicates a cynical attitude toward the past. The reconstructive nature of this perspective allows the individual to remain in a negative mindset, which may stem from the effect of traumatic experiences and/or negative recall. The Past Positive (PP) temporal frame is perceived when the individual exhibits a sympathetic view of their past experiences. An experience of trauma or regret may spark a positive reflection of past events. Present Hedonistic (PH) is marked by impulsive decisions and pleasure seeking for the moment. Individuals in this mindset have little concern for future consequences and therefore may exhibit risk-taking. Present Fatalistic (PF) is identified through a belief that circumstances in life are predetermined through fate and uncontrollable events. In this perspective, there is a strong belief that the future events are not affected by individual action and instead are at the mercy of external control factors established through destiny. Future (F) is recognized through the prevalence of rewards and long-term goals. This thought system is characterized through goal planning and achievement. The

influence of the past can influence the understanding of and reaction to the momentary decision making process. The influence of the future exhibits its force through the anticipation of a reward that is portrayed through the present. Both of these processes involve some level of cognitive construction or reconstruction that will influence decision making in the present moment. Considering the influence of multiple dimensions at the conceptual level allows for a more diverse interpretation of TP. Time Perspective Theory shows how TP is related to diverse behaviors and dispositions. Variation among temporal perspective is a distinguishing factor across the development of subjective thoughts, feelings, and reactions. These five subdivisions within this variable display configurations of the past and the future, which in turn impact behavior.

2.1.3 Associations with Time Perspective

TP has been linked to a variety of factors across diverse settings. One prominent finding has been the relationship between TP and health variables (Anagnostopoulos & Griva, 2012). PN and PF have significantly been observed to be positively related to depression and anxiety while negatively related to proactive coping, and dispositional optimism and self-esteem. Drake et al. (2008) PN to be negatively associated with subjective happiness. Those who hold a helpless attitude towards their future through a PF may be indicated through poor mental health. Drake et al. (2008) found PN to be negatively associated with subjective happiness. Additionally, Zhang et al. (2011) found it to be associated with lower life satisfaction. Drake, Duncan, Sutherland, Abernethy & Henry (2016) examined Time Perspective in a UK university sample and found TP to correlate with well-being. PF subscale was found to be negatively related with subjective happiness. PN and subjective happiness were negatively associated. Another study explored the link between TP and emotion regulation in relation to subjective passage of time (Wittmann, Rudolph, Gutierrez, & Winkler, 2015). PN is related with overall negative attitude towards time passage, as well as increased time pressure, boredom and feeling of routine.

PH and PP were positively related to mindful orientation while PN was negatively related. Alternatively, PH is associated with less of a routine style of life. These results show that time perspective can indicate diverse attitudes towards speed of time passage (Wittman, et al., 2015). PH along with PP was found to be positively related to subjective happiness, (Drake et al., 2016). PP was found to exhibit a negative association with anxiety and depression but a positive link with self-esteem (Drake et al., 2008).

F has been found to be positively related to proactive coping. Similar to the findings from Zimbardo & Boyd (1999), research has found a negative correlation between Future TP and generalized anxiety disorder (Papastamatelou et al., 2015). One study found no significant finding between Future TP and subjective happiness, proposing that focusing on future goals may hinder individuals from embracing the present reality and create more anxiety around subjective time constraint (Drake et al., 2016). Individuals with Future TP predicted a faster speed of time passage overall while Present Hedonistic people were found to feel a faster flow of time in the last week (Wittmann et al., 2015).

Self-regulation is shown to display a notable role in time perspective (Zebardast, Besharat & Hghighatgoo, 2011). Features of self-regulation such as higher control ability were observed more frequently in individuals high in Future TP and less in individuals high in Past Negative TP. These results suggest that applying control materializes as a motivation for goal accomplishment. The extensive research discussing how diverse factors link to TP illustrates the applicability of this construct across extensive settings. Considering the vitality of TP associating with health-related factors, it's critical to consider its weight in regards to organization relevant factors. Saraiva & Iglesias (2016) found that time perspective differences only influence competition in situations that are affected by time constraints. Individuals displaying Present Fatalistic TP and Present Hedonistic TP displayed more competitive type of behaviors in situations involving social dilemma, which is suggested to originate from their baseline features of risk taking behavior and little regard for future consequences. Future TP was observed to affect work outcome such that it increased work engagement

and job performance (Kooij, Tims, & Akkermans, 2016). Future TP has also been found to be positively related to job attitude while Past Negative TP has exhibited a negative relationship (Ortiz & Davis, 2016). These findings display the complexity of TP as a concept in that it potentially impacts behavior that is more than likely to affect professional behavior in the organizational context.

Over multiple decades, studies continue to reveal a wide range of associations linking time perspective to various factors including well-being, life satisfaction, competition and cooperation in social dilemma, learning experiences, and trust, among numerous others (Boniwell et al., 2014; Imbellone & Laghi, 2016; Laghi, et al. 2016; Molinari et al., 2016).

2.1.4 Balanced Time Perspective

Time Perspective Theory is a conceptual framework that is established as "the often non conscious process whereby the continual flows of personal and social experiences are assigned to temporal categories, or time frames, that help to give order, coherence, and meaning to those events" (Zimbardo & Boyd, 1999, p. 1271). This temporal screening can be dually recognized as a continuous process that shapes present experiences and as a trait that fixates on a specific "time view". TP can either occur as a temporary shift in perspective due to situational circumstances or as a more stable point of view that is channeled frequently due to the individual's culture and formative years. Theoretically, the optimal approach appears to be to exercise Balanced Time Perspective (BTP). BTP is recognized as the individual's ability to "switch effectively among TPs depending on task features, situational considerations, and personal resources, rather than be biased towards a specific TP that is not adaptive across situations" (Zimbardo & Boyd, 1999, p. 1285). Considering TP as a process and a trait, this temporal adaptation allows the individual to cognitively categorize experiences while also transitioning between a fixation on the past, present or future. While an individual’s ability to remain fixated in one time orientation can be recognized as a trait, the potential to adapt to altering situations and exercise different time

orientations take into consideration it resulting in a biological state. Possessing a stronerg feeling of time awareness in the individual's temporal profile gives way to a more pronounced capability of adapting the temporal mode to the appropriate situation, (Boniwell & Zimbardo, 2004; Lennings, 1998).

Research exhibits a few ways of the operationalization of BTP using the ZTPI (Stolarski, Wiberg, & Osin, 2015; Zhang et al., 2013). Rather than categorizing individuals as displaying BTP (Drake et al., 2008; Boniwell et al., 2011), Stolarski et al. (2011) developed a method that scores how much each individual in the sample deviates from BTP. In this approach, the closer an individual deviates from BTP (DBTP) score is to zero, the more they exhibit a BTP profile. The current paper will utilize the DBTP approach by Stolarski et al. (2011).

The BTP profile is characterized by relatively higher scoring on PP, PH and F and lower scoring on PN and PF, (Boniwell & Zimbardo, 2004). Individuals display a positive view of the past, utilize goals, embrace the present while exhibiting less negativity towards the past and less submission of responsibility to predestination.

This fluid transition that is at the core of BTP is driven by the foundation of mindfulness (Drake, Duncan, Sutherland, Abernethy, & Henry, 2008). The basic elements that make up mindfulness are essentially observed in the emergence process of BTP. Techniques such as framing ability, task concentration, and ability to adjust between TPs suggest it to be drawn from the primary components of mindfulness which is heavily grounded on raised awareness and maximum engagement (Vowinckel, 2012). These aspects of mindfulness build the foundational structure of BTP and help define it within the time perspective realm.

According to Time Perspective Theory, an individual that indicates a certain TP may likely be fixed on approaching a majority of experiences through that expressed TP. However, an individual with BTP has the capacity to engage in situations through a flexible TP. Depending on the demands of the circumstances, BTP has the cognitive tools that allows the individual to cater to the situation.

BTP as a high predictor of well-being (Zhang et al., 2013) and emotional intelligence (Stolarski, Bitner, & Zimbardo, 2011) signifies a few of the many positive features that a BTP profile may indicate.

2.1.5 Associations with Balanced Time Perspective

A display of BTP may also yield an illustration of various other characteristics across settings. Research shows that BTP is positively related to an adaptive mood profile (Stolarski, Matthews, Postek, Zimbardo & Bitner, 2014). Furthermore, findings in a clinical setting show that aiming to balance a TP profile is beneficial for PTSD therapy.

Individuals who displayed BTP had a significantly higher average score for mindfulness and subjective as compared to those higher in the other temporal frames (Drake et al., 2016). Individuals who displayed mindfulness tended to have a more positive view of the past and life overall. The study suggests that a mindfulness state allows individuals to have an increased ability to balance work with personal life, and increase the likelihood of a BTP profile. The importance of BTP is exhibited through results that show that the higher the DBTP score, the higher the perceived stress level (Papastamatelou et al., 2015). Additionally there was a negative correlation between generalized anxiety disorder and BTP. An individual harnessing BTP may be able to manage negative reactions through cognitive reappraisal aimed at the origin of stress (Matthews & Stolarski, 2015). Through such findings, research is able to exhibit the physical and psychological benefits of possessing BTP.

BTP, along with the ability to regulate emotions, was found to be associated with a slower subjective passage of time (Wittmann et al., 2015). This is relevant in relation to its fundamental aspect of raising awareness to the current moment. Research demonstrates how mindfulness has been shown to predict BTP (Stolarski et al., 2016). Higher awareness features of mindfulness and self-regulation over awareness help an individual monitor one's TPs, which aid in the generation of BTP. Zimbardo and Boyd (2008) state that the dual element of

attitude and orientation towards the present in mindfulness helps establish a foundation for BTP. The development of BTP is an unconscious process that emerges through a strong sense of time awareness and flexibility to adapt to the present situation. Given the applicability of mindfulness to be the predictor of BTP and stress, the current study aims to examine the mediation effect for BTP between mindfulness and stress.

2.2 MINDFULNESS

2.2.1 Definition and Conceptualization

Mindfulness has received an increase in attention through empirical research recently and this is mainly due to the growing popularity of Buddhism in the West. Kabat-Zinn drew significant attention to this concept of mindfulness by reviving the definition in order to implement it into everyday life. According to Kabat-Zinn (1991), mindfulness can simply be understood as "paying attention in a particular way; on purpose, in the present moment, and nonjudgmentally," (p. 4). Bishop et al. (2004) defined mindfulness as the "self-regulation of attention so that it is maintained on immediate experience, thereby allowing for increased recognition of mental events in the present moment," (p. 232). Originating from foundational Buddhist discussion on meditation practice, the term *satipatthãna* is the historical reference to "mindfulness" or "awareness," (Goldstein, 2006). When deconstructed, *sati* means "stands by" or "ready at hand", in the sense of being present and *patthãna* nears the meaning of "placing near", which translates the term *satipatthãna* to "presence of mindfulness" or "attending with mindfulness". Kabat-Zinn (2001) has gathered that masters of Buddhism "suggest that by investigating inwardly our own nature as beings, and particularly, the nature of our own minds through careful and systematic self-observation, we may be able to live lives of greater satisfaction, harmony, and wisdom," (p.4). Mindful awareness consists of three fundamental aspects: purpose, presence, and acceptance, (Naik, Harris, & Forthun, 2016). Purpose encompasses directing attention with purpose

and intention rather than letting it wander. Presence entails full engagement and attention to the present moment without letting thoughts about past or future affect one's attendance to the moment. Acceptance involves a nonjudgmental attitude towards whatever arises with each moment. In other words, each thought and emotion is objectively observed. These three components define this quality of consciousness that scientists are actively transforming into empirical research (Kohls, Sauer, & Walach, 2009; Black, 2010).

2.2.2 Mindfulness Training

Kabat-Zinn began his research on mindfulness in the 1970s to observe its effect on patients suffering from chronic pain and stress-related illnesses (1991; 2005). This research lead him to develop the Mindfulness-Based Stress Reduction (MBSR), which is an eight to ten week training program that has shown to benefit a variety of individuals, whether they are cancer patients suffering from depression or professionals afflicted from high stress, (Grossman, Niemann, Schmidt & Walach, 2004). Participants meet weekly on average two hours of formal instruction and comes to a close with a full seven to eight hour intensive session held around the sixth week. The MBSR consists of weekly sessions complete with organized sessions which include meditation, discussion of stress and coping, and body scans. The body scan is an exercise lasting 45 minutes that requires the individual to lie down with their eyes closed then, attention is directed to various areas of the body. Sensations are watched carefully and participants also practice mindfulness while moving through routine activities such as standing, walking, and eating. All mindfulness exercises require the individual to fully focus on the target observation and carry that awareness through each moment. Participants are to maintain a nonjudgmental attitude to avoid becoming absorbed in the content. This exercise is aimed to minimize the distress associated with pain by focusing on pain non-judgmentally. When the individual notices a drift into thought, memory, or fantasy, this distraction is recognized and attention is yielded back to focusing on the present moment. All mindfulness exercises are

centered on directing attention specifically to the target of observation, whether it be breathing or walking, etc., and raising awareness in each moment. Throughout this practice, individuals are encouraged to rehearse these skills for at least 45 minutes per day, six days per week, on their own time without formal instructions. Audiotapes are used in application early on in the program but participants are encouraged to continue without the tapes after a few weeks of practice. The purpose of this being to immerse these methods into the individual's daily routine through self-guidance.

Research shows that MBSR shows statistically significant improvements in regards to pain among other general medical and psychological related symptoms (Baer, 2003). The effects of this program show significant improvements among individuals suffering from generalized anxiety, panic disorders, binge eating disorder, depression, fibromyalgia and psoriasis among others. Cancer patients reported significant decrease in mood disturbance and stress levels, and moreover, these results were maintained at a follow up after six months.

Additionally, the application of MBSR shows benefits in nonclinical populations as well. Findings show significant improvement on psychological symptoms, empathy rating, spiritual experiences, reduction of stress levels, and higher levels of melatonin, which previous research suggests a relation to immune function, (Bartsch et al., 1992; Massion, Teas, Hebert, Wertheimer, & Kabat-Zinn, 1995; Shapiro et al., 1998). Though the original purpose of the MBSR was to alleviate pain for the chronically ill patients that were not responding well to treatment, it has gradually become a training that is applied to diverse settings. The implementation of the MBSR into work environments present significant changes such as decrease in stress, dissatisfaction in life, and job burnout and an increase in self-compassion (Shapiro, Astin, Bishop & Cordova, 2005). The essence of the MBSR is to expand and incorporate mindfulness into the everyday life of all populations. Reflecting upon the origin of the MBSR, Kabat-Zinn (2011) states: "The inevitable result is to be caught up in a great many of our moments in a reactive, robotic, automatic pilot mode that has the potential to

easily consume and colour our entire life and virtually all our relationships" (p. 293).

Aside from MBSR, there are a few other methods that promote self-regulation of attention and address various medical issues, including Mindfulness-Based Cognitive Therapy (MBCT), Dialectical Behavior Therapy (DBT), Acceptance and Commitment Therapy (ACT), and Relapse Prevention (RP). MBCT is an eight-week intervention based on the MBSR program. This program is geared to prevent a relapse in depression and aims to aid depressed individuals in nonjudgmental awareness of thoughts, feelings, and reality. DBT is a program directed to the treatment of borderline personality disorder (Linehan, 1993). Based on acceptance and change, individuals are encouraged to accept their histories and their conditions as they are while making an effort to improve their quality of life. Unlike the MBSR, clients undergoing DBT act on their own frequency and may customize their exercises. ACT is a program based on contemporary behavioral analysis (Hayes & Wilson, 1993). This style is centered on encouraging individuals to distance themselves from the temptation to control thoughts and feelings, and observe without judgment instead. RP is a cognitive-behavioral treatment program that is directed towards individuals recovering from substance abuse.

All of these methods mentioned were created with the basic core principles of mindfulness while catering to a variety of individuals with a diverse range of needs. Not only has mindfulness training, such as MBSR, proven to be an effective form of treatment for a variety of illnesses, research shows that it can serve as a practical tool for promoting self-care and wellbeing of health professionals as well (Nilsson, 2016). Building an empathetic bond over time between co-workers and clients leads to a trustful interaction. The physical and mental exercises that are presented through mindfulness training leads to increased personal resilience, which plays a primary role in coping with stress as well as expanding sense of life purpose.

2.2.3 Associations with Mindfulness

Although mindfulness was born out of a Buddhist belief system, its application has spread beyond the Zen teaching environment. Ever since research began to expand on mindfulness, there has been an expanding collection of empirical findings relating to various settings and populations. Mindfulness can be measured as a state or an individually perceived trait, through self-report measures which include examples such as Mindful Attention and Awareness Scale (MAAS), Five Facet of Mindfulness Questionnaire (FFMQ), Cognitive and Affective Mindfulness Scale (CAMS), etc. While mindfulness is often measured as a state-like variable in individuals after administering mindfulness training, dispositional mindfulness can be measured in individuals with the absence of mindfulness training in order to assess their baseline level of mindfulness. Mindfulness has been shown to be related to mindful engagement, higher life satisfaction, self-esteem, and lower levels of depression, anxiety, self-consciousness, anger-hostility, and neuroticism, (Brown & Ryan, 2003). Interventions that involve mindfulness training are shown to help with treatment for addiction, borderline personality disorder, depressive episodes, and chronic pain (Baer, 2003). Research shows that mindfulness and stress have been found to be mediated through self-acceptance. Self-acceptance is observed higher in individuals exhibiting Future TP (Alvos, Gregson, & Ross, 1993). A significant amount of evidence focuses on mindfulness in relation to attentional control, memory, and decision making in judgement. According to Weber & Johnson (2009), allocations of attention are guided by the internal state of the decision maker. Increasing age has been found to be related with stronger mindfulness present oriented perspective (Wittmann et al., 2015). An individual's value of material and/or non-material dimensions harbor the direction of attention through goals.

Positive professional relationships (Vogus & Welbourne, 2003) and organizational efficiency (Wheeler et al., 2012) have been associated to traits drawn from mindfulness. Mindfulness has been observed to be positively related to work engagement (Leroy, Anseel, Dimitrova & Sels, 2013) and reduced job

burnout (Roche & Haar, 2013). Mindfulness has been observed to be positively associated with employee well-being, job satisfaction, satisfaction of needs, and various aspects of employee performances such as role performances and organizational citizenship behaviors (Matthias, Narayanan, & Chaturvedi, 2014). The benefits of mindfulness to be seen in the organizational context is a new and growing field of research. Considering the link between mindfulness and stress, in addition to the frequent presence of stress in the workplace, it will be beneficial for research to evaluate the contributing effect of TP. The ways in which mindfulness affects TP may illuminate the significant and integrated relationship mindfulness and Time Perspective may have on stress. Findings will contribute to pre-existing literature by reinforcing established associations demonstrated through Time Perspective Theory while illuminating new paths for future research. The applicability of this research can extend to a variety of contexts, whether clinical, professional, or every-day life, in which mindfulness and time perspective can influence stress and self-control.

2.3 STRESS

Stress has been and will continue to be a key topic of major research focused on health and well-being (Cohen, Janicki-Deverts, & Miller, 2007). The classification of stress falls into three categories which include environmental, being life event stressors, psychological, which includes subjective evaluation of and reaction to stress, and biological, the chemical response of the body (Cohen & Kessler, 1997; Kopp et al., 2010). Stress is recognized as the level of stress perceived based on an event, environmental factor, personal trait, and/or coping ability (Cohen et al., 1983). Measuring subjective stress takes into consideration the personality of the individual and the context involved in addition to the external variables. In relation to taking account the subjective analysis of stress level, perceived stress includes self-projected thoughts about other perceptions such as lack of control or predictability over one's life and issues that are encountered. This takes into account an individual's problem solving skills, self-

confidence, and perspective on life overall (Phillips, 2013). The matter involves the ability of the individual to attend to the stress rather than the rate of occurrence of the stress. Through the application of various techniques, coping mechanisms, or genetic influence, individuals across contexts have diverse ways in which they approach and resolve stress. As research continues to explore the subject of stress, further details between human interaction and environmental influence begin to surface.

2.3.1 Associations with Stress

Stress has an undeniable influence on the everyday life of an individual. Research shows that increased stress may lead to negative affect and other biological processes that may intensify the probability of further health issues (Cohen et al., 2007). Considering the deep impact this has globally, there is an extensive motivation to alleviate its effects. Increased physical activity has been linked to lowered stress. (Rueggeberg, Wrosch, & Miller, 2011) Those who took part in regular physical activity with a high baseline of stress witnessed a reduction in stress over the course of 2 years. Furthermore, research shows a yoga-based intervention has been found to predict decreased stress, as well as higher quality of life, mindfulness, and self-compassion (Gard et al., 2012). Studies aimed at exploring ways to reduce stress are vital due to the ways in which stress affects individuals' lives from various aspects.

Stress displays a strong presence in the organizational context. Studies show that stress has been seen to be positively related to role conflict, role ambiguity, and an imbalance of load (Baird, 1969; Tosi, 1971; Sales, 1970). Additionally, stress in combination with work pressure has been linked to burnout, decreased job satisfaction, and lower level of professional commitment (Goddard et al., 2006). Research examines the relationship between stress levels at work, locus of control, and work-life balance, (Karkoulian, Srour, & Sinan, 2016). Findings show a negative relationship between stress and locus of control in the sense that stress decreases with internal locus of control, which is higher

levels of control. As stress increased, the study showed that work appeared to interfere with personal life. The strong association between psychological stress and work/life imbalance is often linked to locus of control (Chen & Silverthorne, 2008). Findings point to higher locus of control being attributed to decreased level of stress at work. Lowered stress has also been linked to perception of time (Chavez, 2003). Raised attention to the present has been associated with a decreased level of stress whereas attention directed towards the past, for example, was highly correlated with stress. Mindfulness was found to have a significant negative link with stress and burnout (Gustafsson, Davis, Skoog, Kentta & Haberl, 2014). Individual perception of time has a large impact on the way stress affects individual level of stress.

Research shows that individuals in higher in Past Negative and Present Fatalistic exhibit high levels of stress (Papastamatelou et al., 2015). Additionally, individuals higher in Future have been observed to exhibit lower levels of anxiety. Individuals that deviate from BTP was associated with higher perceived level of stress. Furthermore, individuals who displayed Past Negative and Present Fatalistic Time Perspectives were also found to display higher stress more often. Evidence based on stress response activation (Olivera-Figueroa et al., 2015) shows that Balanced Time Perspective has been identified as a biologically healthy Time Perspective. Individuals were evaluated based on salivary cortisol samples in response to an objective stress test. Given the research based on these individual links between stress, time perspective, and mindfulness, it's essential to explore additional information among these variables. Findings can strengthen the original assertions presented by Zimbardo & Boyd (1999) as well as related research that has grown from Time Perspective Theory. In terms of practical implications, results also be applied to clinical settings for stress reduction. Time therapy training has been shown to improve PTSD (Sword, Sword, Brunskill, & Zimbardo, 2013). Furthermore, findings on time perspective can be utilized in diverse settings, especially within the organizational context. Time perspective coaching workshops show improvement in well-being and management of time (Boniwell, Osin & Sircova, 2014).

2.4 SELF-CONTROL

The matter of control acts on the notion of an indefinite border that exists between acceptable and unacceptable behavior based on the subjective interpretation of social and environmental factors. Individuals are encouraged towards self-expression but expected to adhere to social order. Executed behavior that results from the cooperation between the expected and the realistic results of a situation is widely recognized as self-regulation. Self-regulation, control with effort, is understood as the "ability to inhibit a dominant response to perform a subdominant response, to detect errors, and to engage in planning" (Rothbart & Rueda, 2005, p. 169). Adaptive functioning is founded on effective self-regulation, which exudes numerous benefits. Individual control over perception of the self and the environment may demonstrate principle goal setting and achievement through psychological stability and control. The concept of self-regulation has been used to envelop self-management (Slocum & Sims, 1980) and self-control (Mills, 1983; Thoresen & Mahoney, 1974). Despite the development in terminology over time, the construction of the framework for the underlying control mechanisms remain consistent.

Investigation on self-regulatory self-control behavior dates back to research by Kanfer (1970) that proposes a framework clarifying the functionality between intention and response. The occurrence of reinforcement through social and natural circumstances affect individual behavior. In the absence of external supervision, individuals are expected to develop internal techniques for initiating control responses. Kanfer & Karoly (1972) set out to explain how an individual alters a habit by instigating control response behaviors. The concept of self-regulation was established as the processes by which an individual alters or maintains his behavioral chain in the absence of immediate external supports. The foundation of this model of self-regulation is present through three stages. The initial mode of operation is *self-monitoring.* This phase is sparked on the condition of an attentional interruption, or change in the pace of activation.

Proceeding from this phase develops the *self-evaluation* mode. In this level of operation, the individual compares the quality of performance to the standard of behavior needed to the task at hand. Depending on the subjective analysis in the final stage of *self-reinforcing,* the individual will judge whether current state of behavior should received positive or negative self-reinforcement. Based on this closed-loop model, behavior will either be maintained or altered through self-reinforcements. This process is a personal contract with the aim to illuminate performance criteria. This model exhibits how an individual can applying control over an intended behavior that may initially have started out with low chance occurrence, may increase in the future through behavior evaluation and reinforcement of monitoring.

With the support of social cognitive theory of self-regulation, Bandura (1991) also defends this tri-featured mechanism. He states "success in self-regulation partly depends on the fidelity, consistency, and temporal proximity of self-monitoring" (p. 250). More than just a mechanical process, there needs to be foundational cognitions and self-belief systems in place that will help foster the best results. A large portion of this is due to perception and how information is subjectively organized. Considering the notable impact this has on self-monitoring, this signifies this phase to be one of the more critical of the three. Subjective view of behavior can misrepresent the current state of the situation which may alter the immediate outcome as well as its representation in retrospect. Aside from the most essential functions of self-observation in self-regulation being collection of information for goal attainment and surveillance of progress, this concept has an expandable capacity of multifunctionality. One being *self-diagnostic function*, which is systematic self-observation that can provide important self-diagnostic information which helps magnify patterns of habit. Being attuned to what affects their behavior will signify which influences alter their functioning and well being. This insight can be helpful in changing their behavior in the case that they wish to modify it according to the environment. Observed perception can provide clues as to how various factors such as emotional state, level of motivation, and performance, is influenced. Another is

self-motivating function, which is when goal attainment is organically initiated without prior intention through the act of paying detailed attention to performance. This is an activation of self-evaluative action that mediates the effects of self observation. These include proximity of behavior in relation to time, significance of feedback on behavior, level of motivation, presence of the behavior, attitude on achievements and failures, agreeability to intentional control, and orientation directed towards self-monitoring. Temporal proximity is based on the notion that immediate consequences on present behavior are more likely to leave a lasting impression than distant ones. Informativeness of performance feedback involves the necessity for clear and accurate perception of behavior in order for results to be successful. Motivational level is important because individual desire can be the deciding factor for goal establishment. Low motivation will merely engage detached sense of care over self-observation. Valence of the behavior indicates importance over how the strength of evaluative self-observation can be the deciding factor of the direction of behavior. Meaning, how much an individual values a certain behavior will be symptomatic of their level of satisfaction, which in turn will signify whether it will lead to repetition. Then, the degree of change will be based on whether attention is concerned with successes or failures. This can be the encouraging factor to keep a behavior consistent or alter it for improved results. Amenability to voluntary control emphasizes that self-observation alone is not enough to make a change. Change can only materialize through deliberate effort. Another factor that individuals can differentiate over is self-monitoring orientation, which involves the orientation involved in self-directedness. These variables encompass the performance dimensions and quality of monitoring that goes into the initial phase of self-observation.

The second phase of *self-evaluation* is referred to as the *judgmental process* by Bandura (1991). In order for self-observation to lead to a behavioral change, there needs be a judgmental reaction to regulate whether a behavior is positive or negative. This judgment is largely dependent on the development of personal standards developed either through intuition or interpretation of various

observed reactions of others. Social referencing plays a crucial role as individuals compare their behavior to others', which helps them evaluate the adequacy of their own behavior. Another factor in the judgmental process is the valuation of activities. The extent to which an individual values an activity will determine their performance of that activity. Self-reaction will be activated if behavior will affect the individual's welfare or self-esteem. Individuals will also evaluate the factors that influenced their behavior. If an individual made an accomplishment through their own capabilities, they are more likely to attain self-satisfaction than if they were to receive external support. In the case of unfavorable results, the individual can find the external circumstances to blame.

The third phase, *self-reinforcing*, is also recognized as *self-reaction.* The judgmental process creates the conditions for self-reactions. Creating intention for a behavior in regards to internal standards leads to self-regulatory control. Motivational functions, such as internal satisfaction or tangible benefits, are what largely allow these intentions to activate. People who reward their accomplishments usually achieve more than those who do the same activity due to an external order or without reward attainment (Bandura, 1986). Moreover, the level of self-regulatory skills can determine the effect of effort mobilization in an individual. This is due to self evaluative reactions which work in conjunction with self-incentives. More than just the structure of the self-regulatory system, the functionality of self-efficacy displays a prominent role. Self-efficacy, the individual belief over the capability to exercise control over behavior or events involved, determines self-regulation. The reason there is such a profound effect over self-regulatory systems is due to its influence over self-monitoring and cognitive processing of the individual. Self-beliefs in this matter can affect goal-setting, impact of social comparison, motivation, performance attainment, perception of success and failure, and the value assessment of events (Bandura, 1986). The determinants over whether an individual will be motivated or discouraged by merging personal standards and objectives will often be determined by the personal belief in goal attainment. These factors are vital

because they can be the influential factor that decides if an individual will spring to action.

Self-regulation is carried out in relation to the negative feedback model, which is based on the notion that an individual will only change a behavior if performance does not match the internal standard. Self-motivation involves a dual control process which consists of discrepancy production and discrepancy reduction. This mostly involves proactive control, which is key in mobilizing effort to performing according to standard and feedback control, which assists to achieve desired results. An individual is likely to mobilize through this proactive control by visualizing a performance standard and making an effort to reach them by working through a state of disequilibrium in order to stabilize the created discrepancy. Achieving the set standard is likely to lift aspiration for further challenges. The complex nature of self-regulation that is executed through self-directedness exhibits self-evaluative properties which include anticipated control over effort, influential self-assessment over performance in relation to one's values, self-appraisal of goal achievement, and self-reflection over one's performance evaluation in relation to personal standards. Evaluating one's perception of self-efficacy will help demonstrate whether strived standards are within or exceeding one's capabilities.

2.4.1 Associations with Self-Control

Self-control is an important psychological resource that influences psychological adjustment across settings. Higher self-control within the workplace is linked to burnout and absenteeism across professions (Diestel & Schmidt, 2011). Research shows that self-control is required for better management of stress (Achtziger & Bayer, 2013; Mills, 1983; Park, Wright, Pais, & Ray, 2016). Higher levels of self-control predicted lower levels of anger and aggression (Keatley, Allom, & Mullan, 2017). Time Perspective has been shown to play a prominent role in the execution of individual self-control (Wittmann et al., 2014). Individuals lower on Past Negative and higher on Future were observed

to have higher levels of self-control and reported less impulsive behavior. Findings showed mindfulness to be negatively correlated with impulsiveness. Mindfulness also exhibited higher temporal self-control, Future TP, and a more precise estimate of time duration. Bandura (1991) discusses the crucial role of the future time perspective. The concept of future events exist symbolically with the purpose of fueling motivation and action in the present moment. With consideration to mindfulness and raising awareness to the present, research shows that it is the aspect of self-regulation and flexibility within this construct that allows for increased self-control (Brown & Ryan, 2003, 2004; Leonard, Jha, Casarjian, Goolsarran, Garcia, Cleland, Gwadz, & Massey, 2013). BTP has also been positively associated with self control and negatively related to impulsivity (Wittmann et al., 2015).

Despite the expansive amount of literature covering self-regulation in relation to psychological disciplines, there is few research that compares the relationship of self-regulation between time perspective and mindfulness (Hoyle, 2010; Wittmann et al., 2014; Wittmann et al., 2015; Zebardast et al. 2011). Studies explore either the independent effect between mindfulness and self-control or the associations between time perspectives and self-control. Research rarely addresses whether a significant portion of self-regulation processes are a reflection of time perspective in addition to mindfulness.

Despite research noting individual connections linking BTP and mindfulness to self control, there is a lack of research that examines all three variables together. The current study will examine whether mindfulness and BTP explain a significant amount of variance in self-control. Furthermore, the study aims to explore Time Perspective as a mechanism between mindfulness and self-control. The current study will also investigate the effect of mindfulness on stress through Time Perspective.

2.5 HYPOTHESIS

The hypotheses of the current study are stated as the following:

1a. To explore which Time Perspective frames will be significantly related to stress as well as its two facets, Perceived Helplessness and Perceived Insufficient Self-Efficacy, when Mindfulness and demographic variables are controlled. The proposed model can be seen in Figure 1.1.

1b. To explore whether Deviation from Balanced Time Perspective will be significantly related to stress as well as its two facets, Perceived Helplessness and Perceived Insufficient Self-Efficacy, when Mindfulness and demographic variables are controlled.

1c. If in 1a and 1b, the time perspectives have a unique contribution to self-control, they will be used as mediators in the association between mindfulness and stress as well as its two facets, Perceived Helplessness and Perceived Insufficient Self-Efficacy. The current paper will concentrate on whether mindfulness exhibits an indirect effect on stress through time perspectives.

2a. To explore which Time Perspective frames will be significantly related to self-control as well as its three facets, Self-Evaluating, Self-Reinforcing, and Self-Monitoring, when mindfulness and demographic variables are controlled.

2b. To explore whether Deviation from Balanced Time Perspective will be significantly related to self-control as well as its three facets, Self-Evaluating, Self-Reinforcing, and Self-Monitoring, when mindfulness and demographic variables are controlled.

2c. If in 1a and 1b, the time perspectives have a unique contribution to self-control, as well as its three facets, Self-Evaluating, Self-Reinforcing, and Self-Monitoring, they will be used as mediators in the association between mindfulness and

stress. The current paper will concentrate on whether mindfulness exhibits an indirect effect on stress through time perspectives.

The expected findings of the present research are aimed to contribute to scientific literature on a theoretical basis as well as in practical application. Mindfulness has been found to be associated with Time Perspective Theory (Seema, 2014) and stress (Olivera-Figueroa et al., 2015), thus these findings aim to strengthen the link between these variables by replicating similar findings. The results of this study will also help reveal more information on the association between mindfulness and self-control. While research has explored the relation between mindfulness, time, and self-control (Wittmann et al., 2014), unlike the current study, findings focus on the correlation of different variables surrounding the realm of cognitive self-control such as motor and cognitive impulsivity. The current study's direct application of Bandura's (1991) definition of self-control may help illustrate which facets of self-control will be associated with mindfulness, as well as which time perspectives will mediate this effect. It will also expand on the pre-existing research that links Balanced Time Perspective and Mindfulness (Stolarski et al., 2016; Vowinckel, 2012) by replicating former findings and explore the ways in which this relationship can foster further relationships with beneficial outcomes. While research exhibits a strong positive association between these two variables, the current research proposes how this relationship may be essential in understanding the association between mindfulness and stress or self-control. Specifically, examining the associations of mindfulness and time perspective to the facets of stress and self-control will reveal further information on the link between these factors. It is essential to explore a mediating effect in order to understand the underlying mechanism that may be responsible in connecting these variables to one another. In terms of practical implications, these findings may also contribute to research investigating time perspective based therapy methods and mindfulness based therapy methods that can broaden and further develop its practical applications toward the field of Organizational Psychology. Time-perspective coaching has been used to address individuals with time management issues and to increase well-being (Boniwell et

al., 2014). Understanding the individual use of time through time perspective reveals information about work-life balance, personality style of time use, meaningful engagement, and more (Boniwell & Osin, 2015). Research has found time perspective therapy also benefits individuals with PTSD (Sword et al., 2012). PTSD is often a concern for employers especially when it comes to hiring veterans (Hall, Harrell, Bicksler, Stewart & Fisher, 2014). Furthermore, these variables are imperative in understanding their relation to critical issues that surround organizations in order to improve job turnover, performance, and well-being, as well as many more.

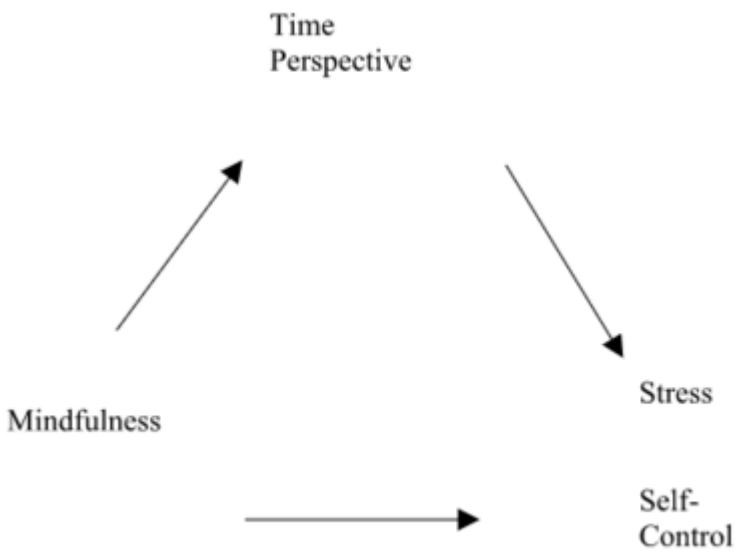

Figure 1.3 Model Tested in Hypothesis 1c

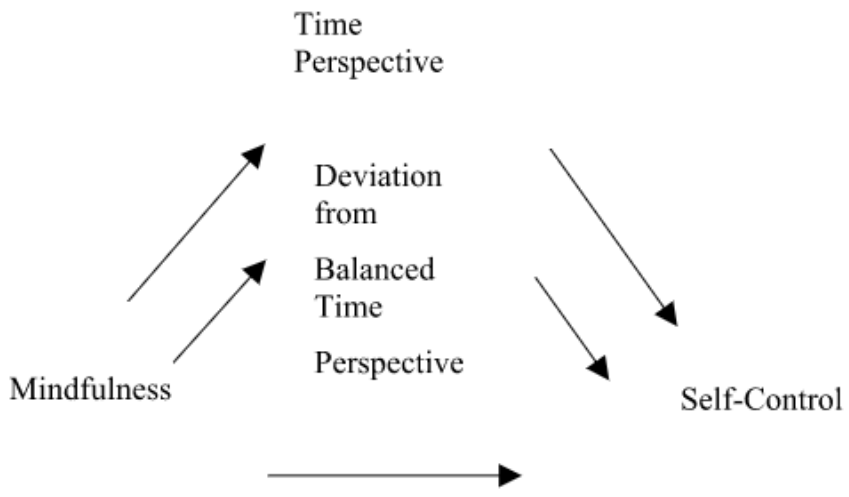

Figure 1.4 Model Tested in Hypothesis 2c

CHAPTER 3
METHOD

3.1 MAIN STUDY

3.1.1 Participants

A total of 184 participants were recruited for the purpose of this study. The participants were students from *Istanbul Bilgi University,* located in Istanbul, Turkey. Students were granted course credit for completing the online questionnaire. An ethics approval was obtained from Istanbul Bilgi University Human Studies Ethical Committee. All participants voluntarily attended the study. Out of 184 surveys, eighteen were eliminated due to extensive missing data (almost none of the questions were answered) and eight more were eliminated due to partial missing data (one or more scales was left unanswered). Overall, twenty-six of the participants were omitted from the final analysis leaving 158 as the total remainder.

Out of 158 participants, the sample consisted of 31 Males and 127 Females, with a mean age of 22.15 (*SD* = 3.86). Participants consisted of undergraduate and graduate students from a Turkish population within the age range of 18-43. The mean GPA among students was 2.93 (*SD*=0.63). The demographic information of the participants are presented in Table 3.1.

Table 3.1

Demographic Information of the Participants

Age (years)		
	M	22.15
	SD	3.86
Gender (%)		

	Male	19.60
	Female	80.40
Education (%)		
	Undergraduate	91.80
	Graduate	8.20
Grade Level (%)		
	First Year	13.40
	Second Year	53.70
	Third Year	20.10
	Fourth Year	12.80
Major (%)		
	Psychology	59.20
	Industrial/Organizational Psychology	8.30
	Business	7.60
	English Language Teacher	2.50
	International Trade & Business	2.50
	Sociology	2.50
	Economy	1.90
	Genetic / Bioengineering	1.90
	International Logistics	1.90
	Public Relations	1.90
	Advertising	1.30
	Cinema & TV	1.30
	Industrial Engineering	1.30
	Marketing	1.30
	Media & Communication	1.30
	Comparative Literature	0.60
	Fashion Design	0.60
	International Relations	0.60
	Law	0.60

	Tourism	0.60
Scholarship Status (%)		
	Received Scholarship	68.20
	No Scholarship	31.80
Previous Work Experience (%)		
	Yes	51.30
	No	48.70
Length of Work Experience (%)		
	None	50.30
	3 months or less	20.30
	4 - 6 months	9.80
	+ 6 months - 1 year	11.10
	+ 1 - 3 years	3.90
	+ 3 - 5 years	0.70
	+ 5 - 10 years	1.30
	10 + years	2.60
GPA	*M*	2.93
	SD	0.63

3.1.2 Measures

Zimbardo Time Perspective Inventory (ZTPI). The ZTPI (Zimbardo & Boyd, 1999) is a 56-item scale comprised of five subdimensions which include past negative, present hedonistic, past positive, future, and present fatalistic. Individuals rate statements on a five-point Likert scale depending on how each one relates to them (1= very untrue of me, 5= very true of me). Sample items

include *'It gives me pleasure to think about my past'* (past positive), *'I think about the bad things that have happened to me in the past'* (past negative), *'I take risks to put excitement in my life'* (present hedonistic), *'My life path is controlled by forces I cannot influence'* (present fatalistic), and *'When I want to achieve something, I set goals and consider specific means for reaching those goals'* (future). The ZTPI has shown to be a reliable and valid measure over the years. Cronbach's alpha for ZTPI scales are found to be 0.83, 0.81, 0.75, 0.62, and 0.73 (Stolarski et al., 2016). The current study will use the Turkish adaptation of the scale translated by Kislali-Erginbilgic in the study by Sircova et al. (2015), which exhibits a Cronbach's alpha of 0.81 for Present Negative, 0.60 for Present Positive, 0.65 for Present Fatalistic, 0.76 for Present Hedonistic, and 0.72 for Future. The reliability for the current study were 0.85 for Past Negative, 0.73 for Present Hedonism, 0.77 for Future, 0.66 for Past Positive, and 0.70 for Present Fatalistic. Past Negative consists of 10 items, Present Hedonism consists of 15 items, Future consists of 13 items, Present Fatalism consists of 9 items and Past Positive consists of 9 items. Items numbered 9, 11, 21, and 41 have been reverse coded, ex: 1=5, 2=4, 3=3, etc. Furthermore, DBTP will be used to evaluate how much an individual deviates from the analyzed time perspectives from the ideal scores from the dimensions of the ZTPI (Stolarski et al., 2011). Balanced Time Perspective is identified through high scoring on Past Positive TP, moderately high scoring on Future and Present Hedonistic TP, and low scoring on Past Negative and Present Fatalistic TP, (Zimbardo & Boyd, 2008). The ideal score of a DBTP in reference to the ZTPI would be to score 0 (Vowinckel, 2012). Optimal scores are as follows, 1.95 for Past Negative, 4.6 for Past Positive, 1.5 for Present Fatalistic, 3.9 for Present Hedonistic, and 4 for Future, (Zimbardo & Boyd, 2008; Stolarski et al., 2011; Zhang et al., 2012). Lower scoring of DBTP demonstrate a higher level of BTP. As seen in the formula below, DBTP is calculated as a coefficient through the implementation of Zimbardo & Boyd's (2008) theory. The empirically calculated Past Negative value, *ePN,* is subtracted from the optimal Past Negative value, *oPN,* then squared. The empirically calculated Past Positive value, *ePP,* is subtracted from the optimal Past Positive value, *oPP,* then squared.

The empirically calculated Present Fatalistic value, *ePF,* is subtracted from the optimal Present Fatalistic value, *oPF,* then squared. The empirically calculated Present Hedonism value, *ePH,* is subtracted from the optimal Present Hedonism value, *oPH,* then squared. The empirically calculated Future value, *eF,* is subtracted from the optimal Future value, *oF,* then squared. All of these values are added and the square root of this sum value is taken. The closer the final value is to zero, the stronger the value signifies balanced time perspective.

Table 3.2

Internal Consistency for the Four Scales

Scale	Items	Cronbach Alpha
1 Mindfulness	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15	0.84
2 Time Perspective		
Past Negative	4, 5, 16, 22, 27, 33, 34, 36, 50, 54	0.85
Past Positive	2, 7, 11, 15, 20, 25, 29, 41, 49	
0.66		
Present Hedonism	1, 8, 12, 17, 19, 23, 26, 28, 31, 32, 42, 44, 46, 48, & 55	0.73
Present Fatalistic	3, 14, 35, 37, 38, 39, 47, 52, & 53	0.70
Future	6, 9, 10, 13, 18, 21, 24, 30, 40, 43 45, 51, & 56	0.77
3 Stress		0.86
Perceived Helplessness	1, 2, 3, 7, 11, 12, 14	0.81
Perceived Insufficient - Self-Efficacy	4, 5, 6, 8, 9, 10, 13	0.82
4 Self-Control		0.87
Self-Reinforcing	12, 13, 14, 15, 16	0.81
Self-Evaluating	7, 8, 9, 10, 11	0.55

Self-Monitoring	1, 2, 3, 4, 5, 6	0.88

Mindfulness Attention and Awareness Scale (MAAS). The MAAS (Brown & Ryan, 2003) is a 15-item scale that assesses the characteristic of trait mindfulness based on a unidimensional model. Individuals rate statements on a six-point Likert scale depending on how each one appeals to them (1=almost always, 6=almost never). Examples of items include *'It seems I am 'running on automatic', without much awareness of what I'm doing'* and *'I find myself preoccupied with the future or the past'.* The MAAS has demonstrated high test-retest reliability, discriminant and convergent validity, known-groups validity, and criterion validity (Carlson & Brown, 2005). Cronbach's alpha generally ranges from 0.80 to 0.90. The current study will use the Turkish adaptation of the scale translated by Ozyesil, Arslan, Kesici, & Deniz (2011) which has a Cronbach's alpha of 0.80 and a test-retest of 0.86. Cronbach's alpha in the current study was 0.84 (n=154).

Perceived Stress Scale (PSS). The PSS (Cohen et al., 1983) is a 14-item scale that assesses the level of stress perceived by an individual. This scale is comprised of two dimensions, which include 'Perceived Helplessness' and 'Perceived Insufficient Self-Efficacy'. PSS scores were obtained by reversing scores on seven of the total items, ex. 1=5, 2=4, 3=3, etc. and then obtaining the sum over the total 14 items. The items numbered 4, 5, 6, 7, 9, 10, and 13 were all reversed because they were positive items. Participants rate statements on a five-point Likert scale depending on how each one relates to them (1=never, 5=very often). Examples of items include *'In the last month, how often have you been upset because of something that happened unexpectedly?'* and *'In the last month, how often have you been able to control irritations in your life?'.* The PSS-14 has demonstrated an internal consistency reliability range of 0.84 - 0.86 and a test-retest reliability of 0.85 (Lee, 2012). Mimura & Griffiths (2004) found the two-factor structure to account for 50-53.2% of the variance with a cronbach's alpha range of 0.81-0.88. The current study will use the Turkish adaptation of the scale translated by Yerlikaya (2006), which has a cronbach's alpha coefficient of 0.84

for overall stress, 0.76 for perceived helplessness, and 0.81 for perceived insufficient self-efficacy. Cronbach's alpha in the current study was 0.86 for overall stress (n=152), 0.81 for perceived helplessness, and 0.82 for perceived insufficient self-efficacy.

Self-Control and Self-Management Scale (SCMS). The SCMS (Mezo, 2009) is a 16-item scale that evaluates how an individual manages their behavior to reduce inconsistencies with externally determined standards. This is process-driven scale that addresses three sub-dimensions which include 'Self-Evaluating', 'Self-Monitoring', and 'Self-Reinforcing'. Individuals rate statements on a six-point Likert scale according to how each statement appeals to them (1=very untrue of me, 6=very true of me). Items are '*I become very aware of what I am doing when I am working towards a goal*' and '*I keep focused on tasks I need to do even if I do not like them*'. Cronbach's alpha for the entire scale is found to be 0.81 while the test-retest reliability is found to be 0.75. Cronbach's alpha coefficient for 'Self-Monitoring' is 0.74, 'Self-Evaluating' is 0.75, and 'Self-Reinforcing' is 0.78. Items numbered 7, 8, 9, 10, and 11 were reverse coded items such that 1=5, 2=4, 3=3, etc. The current study will use the Turkish adaptation of the scale translated by Ercoskun (2016) shows a cronbach's alpha coefficient of 0.87 for the whole scale, 0.81 in the 'Self-Reinforcing', 0.73 in the 'Self-Evaluating', and 0.80 in the 'Self-Monitoring' sub-dimension. Cronbach's alpha for the current study was 0.87 (n=148).

3.1.3 Procedure

Participants completed an online version of the *Zimbardo Time Perspective Inventory* (ZTPI), *Mindfulness Attention and Awareness Scale* (MAAS), *Perceived Stress Scale* (PSS), and *Self-Control and Self Management Scale* (SCMS). All measures have a valid and reliable Turkish adapted version of the scale. Participants were informed about the details and the objectives of the study. The participants responded to a set of questions addressing demographics which include age, sex, grade point average, grade level, major, scholarship

status, and previous work experience. The survey was administered through SurveyMonkey.

3.1.4 Data Analysis

The demographic information was defined using descriptive and frequency analysis. Independent sample t-tests were conducted to analyze differences between men and women as well as between those who did and did not have work experience.

Pearson correlations were used to calculate correlations between demographics, mindfulness, Time Perspective Subscales, overall Stress, Stress Subscales, Self-Control, and Self-Control subscales.

A hierarchical regression analysis is conducted to analyze if demographics, mindfulness and Time Perspective predict stress. Demographics were entered in the first step, while mindfulness and Time Perspective were included in the second step to examine how much variance they would account for when controlling for the demographics. Individual hierarchical regression analyses was conducted to examine the effects of these variables on stress as well as its two sub-dimensions. DBTP was examined in a separate set of hierarchical regression analyses due to exhibiting high correlation with the Time Perspective frames. This was followed by a mediation analysis to observe the mediation effect of Time Perspective between mindfulness and stress. A multiple mediation analysis was conducted to analyze the mediating role of Time Perspective in relation to mindfulness and stress. Deviation from BTP was tested for mediation in a separate analysis due to high correlation with the other Time Frames but they will be included in the same visual model in depicting the findings. Additionally, separate mediation analyses were conducted for both of the sub-dimensions of stress. Traditionally, mediation analysis is directed through the Baron and Kenny approach (1986). This approach is grounded on a set of hypotheses that need to be validated through a causal process. These include a significant regression between independent variable and mediator (path a), a significant regression between

mediator and dependent variable (path b), a significant relationship between independent and dependent variable while controlling for the mediator (path c'), and a significant relationship between the independent and dependent variable, excluding the mediator (path c). However, this causal steps procedure has been observed to have low statistical power (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). While this approach searches for a total effect between independent and dependent variable, the Hayes (2013) approach does not consider this as a requirement by applying a bootstrap method. He argues that a mediation can occur through an indirect effect between independent and dependent variable without the presence of a total effect. Using bias corrected bootstrap confidence intervals, evidence of an indirect effect is presented if the confidence interval does not contain and is either entirely above or entirely below zero. Unlike the Hayes method, the Baron and Kenny approach does not have a test to show that an indirect effect has occurred. The Baron and Kenny approach suggests the use of the Sobel test to calculate an indirect effect however, the Sobel test relies on a normal sample distribution. The bootstrapping approach used in Hayes (2013) method utilizes a resampling procedure where an appropriate sampling distribution is built through a process of random sampling of data. Lower and upper-bound limits are selected as the confidence intervals to determine the indirect effect.

A hierarchical regression analysis was conducted to analyze whether demographics, mindfulness and Time Perspective predict Self-Control. An individual hierarchical regression analysis was performed to see whether demographics, mindfulness and DBTP predicts Self-Control. Additionally, separate hierarchical regression analyses were performed for all three facets of Self-Control.This was followed by a similar mediation analysis to observe the indirect effect between mindfulness and Self-Control as well as all three of its sub-dimensions through the Time Perspective frames and DBTP that were observed significant in the preceding regression.

CHAPTER 4
RESULTS

4.1 DESCRIPTIVE FINDINGS

An independent samples t-test was conducted in order to observe differences between men and women. An independent samples t-test was conducted in order to observe differences between those who did or did not have previous work experience. Significant differences were observed in terms of overall stress, in that, those who had previous work experience (M = 3.40 SD = 0.33) experienced significantly higher stress than those who had no previous work experience (M = 3.28 SD = 0.42), $t(150) = 2.002$, $p = 0.047$. No differences were observed in work experience among Perceived Helplessness and Perceived Insufficient Self-Efficacy sub-dimensions. No differences in gender were observed in overall Stress. No differences in gender or work experience were observed among the five time perspectives or DBTP. No differences in gender or work experience were observed among mindfulness or Self-Control.

4.2 CORRELATIONS

Correlations were conducted in order to review the relations observed between mindfulness, Time Perspective, Stress and Self-Control. Results revealed some significant correlations between mindfulness and Time Perspective dimensions. A significant positive significant positive correlation between mindfulness and Future Time Perspective was observed such that higher levels of mindfulness exhibited higher levels of Future Time Perspective. A significant negative correlation between mindfulness and Present Fatalistic, Past Negative, DBTP indicated that higher levels of mindfulness displayed lower levels of Present Fatalistic, Past Negative, and DBTP. The rest of the correlations for the remaining Time Perspectives can be seen in Table 4.1.

Table 4.1

Time Perspective, Mindfulness, Overall Stress, Overall Self-Control, Demographics: Correlations

Variables		1	2	3	4	5	6	7	8	9
1.	PN	-								
2.	PH	-.16*	-							
3.	F	-.06	-.10	-						
4.	PP	.21**	.19*	.07	-					
5.	PF	.44**	.05	-.20*	-.01	-				
6.	DBTP	.78**	-.14	-.21*	-.61**	.60**	-			
7.	MI	-.29**	-.02	.19*	.07	-.32**	-.35**	-		
8.	TS	.12	.22**	.24**	.16**	.04	-.03	.06	-	
9.	TSC	-.10	.05	.37**	.19*	-.31**	-.24**	.19*	0.16	-
M		3.09	3.79	3.70	3.52	2.62	2.27	3.78	3.34	3.51
SD		.79	.45	.53	.70	.64	.79	.78	.38	.66

*$p < 0.05$. **$p < 0.01$.

Note. PN = Past Negative. *PH* = Present Hedonism. *F* = Future. *PP* = Past Positive. *PF* = Present Fatalistic. *DBTP* = Deviation from Balanced Time Perspective. MI = Mindfulness. TS = Total Stress. TSC = Total Self-Control. *M* = Mean. *SD* = Standard Deviation.

Results revealed some significant correlations between Stress and Time Perspective dimensions. Stress was found to have a positive correlation with Past Hedonism, Future and Past Positive Time Perspective, such that individuals with higher total stress were found to have higher levels of Past Hedonistic, Future, and Past Positive Time Perspective. The remaining correlations can be found in Table 4.1 and 4.2. In terms of the sub-dimensions of Stress, Perceived Helplessness was

found to be positively correlated with Past Negative, Present Fatalistic, and DBTP. The Perceived Insufficient Self-Efficacy sub-dimension was found to be positively correlated with Past Negative, Present Fatalistic, and DBTP. Perceived Insufficient Self-Efficacy is negatively correlated with Present Hedonistic and Future Time Perspective. The rest of the correlations can be seen in Tables 4.1 and 4.2.

Table 4.2

Time Perspective, Stress and Self-Control Subdimensions: Correlations

Variables	Stress		Self Control		
	Perceived Helplessness	Perceived Insufficient Self-Efficacy	Self-Evaluating	Self-Reinforcing	Self-Monitoring
PN	0.51**	0.38**	-0.08	-0.07	-0.11
PH	-0.11	-0.23**	-0.08	0.11	-0.01
F	0.04	-0.22**	0.15	0.24**	0.45**
PP	0.03	-0.08	0.14	0.17*	0.07
PF	0.26**	0.33*	-0.25**	-0.25**	-0.26**
DBTP	0.38**	0.43**	-0.20**	-0.17**	-0.21**
Mindfulness	-0.34**	-0.40**	0.11	0.10	0.23**
M	3.38	2.72	3.63	3.58	3.36
SD	0.69	0.66	0.72	0.91	0.83

*$p < 0.05$. **$p < 0.01$.

Note. PN = Past Negative. *PH* = Present Hedonism. *F* = Future. *PP* = Past Positive. *PF* = Present Fatalistic. *DBTP* = Deviation from Balanced Time Perspective. *M* = Mean. *SD* = Standard Deviation.

Mindfulness was not found to be significantly correlated with total Stress. However, mindfulness was found to have a significant negative correlation with both of overall Stress' sub-dimensions, Perceived Helplessness and Perceived Insufficient Self-Efficacy. The rest of the correlations can be found in Table 4.1 and 4.2.

Mindfulness was found to be significantly positively correlated with overall Self-Control. It was found to be significantly positively correlated with one of the three of Self-Control's sub-dimensions, Self-Monitoring. The rest of the correlations can be found in Table 4.1 and 4.2.

Self-Control was found to have a positive correlation with Future and Past Positive Time Perspective while exhibiting a negative correlation with Present Fatalistic and DBTP. Self-Evaluating sub-dimension was found to be significantly negatively correlated with Present Fatalistic and DBTP. Self-Reinforcing sub-dimension was found to be significantly positively correlated with Future and Past Positive and negatively correlated with Present Fatalistic and DBTP. The Self-Monitoring sub-dimension of Self-Control was found to be significantly positively correlated with Future Time Perspective, and negatively correlated with Present Fatalistic and DBTP. Further correlation results can be found in Table 4.1 and 4.2.

4.3 HIERARCHICAL REGRESSION ANALYSIS: MINDFULNESS, TIME PERSPECTIVE, AND STRESS

A hierarchical regression analysis was conducted to evaluate whether age, gender, mindfulness and Time Perspective predicted total Stress. Demographics were entered in the first step as control variables, while mindfulness and Time Perspective were entered in the second step in order to analyze how much variance Time Perspective and mindfulness will account for stress while controlling for demographics. In Step One, demographics such as age and gender were not significant predictors of overall stress, $F(2,136) = 0.879$ $p = 0.47$. In Step Two, the hierarchical regression model with all the three variables in Step

One with the addition of mindfulness and all five Time Perspectives was significant, $F(8,130) = 3.837$, $p < 0.001$. As can be seen in Table 4.3, three of the Time Perspective frames had significant positive regression weights, indicating that higher scores of Past Negative, Present Hedonistic and Future are associated with higher total stress after controlling for the other variables in the model. All five Time Perspectives and mindfulness account for 18.0 % of the variance in total stress. Present Fatalistic and Past Positive did not make a unique contribution to the hierarchical regression model.

Table 4.3

Hierarchical Regression Analysis: Mindfulness, Time Perspective Predicting Total Stress

Variable		*b*	SE *b*	β	*p*
Step One					
Age		0.01	0.01	.06	0.475
Gender		0.06	0.08	.06	0.487
R	0.11				
R^2	0.01				
ΔR^2	0.01				
Step Two					
Age		0.01	0.01	.09	.254
Gender		0.07	0.08	.08	.331
Mindfulness		0.01	0.04	.03	.749
Past Negative		0.14*	0.05**	.29**	.003**
Present Hedonistic		0.24**	0.07**	.27**	.001**
Future		0.17**	0.06**	.24**	.005**
Past Positive		0.07	0.04	.13	.125
Present Fatalistic		-0.05	0.06	-.08	.411
R	0.44**				
R^2	0.19**				

ΔR^2	0.18**

Note. b = Unstandardized Coefficient Beta. SE b = Standardized Coefficients Standard Error. β = Standardized Coefficients Beta. ΔR^2 = Change in R squared. p = Significance p-value, $p < 0.05$*, $p < 0.01$**

An individual hierarchical regression analysis was conducted to evaluate whether age, gender, mindfulness and Time Perspective frames predicted Perceived Helplessness sub-dimension of stress. In Step One, demographics such as age and gender were not significant predictors of Perceived Helplessness sub-dimension of stress, $F(2,136) = 0.096$ $p = 0.91$. In Step Two, demographics with the addition of mindfulness and Time Perspective were significant predictors of Perceived Helplessness, $F(8,130) = 10.489$, $p < 0.001$. As can be seen in Table 4.4, two of the Time Perspective frames had significant positive regression weights, indicating that higher Past Negative and Past Positive exhibits higher Perceived Helplessness sub-dimension of stress after controlling for the other significant Time Perspective variables in the model. Mindfulness had a significant negative regression weight, indicated that higher mindfulness exhibits lower Perceived Helplessness in total stress. Mindfulness and Time Perspective account for 39.0 % of the variance in the Perceived Helplessness sub-dimension of stress. Demographics, Present Hedonistic, Future, and Present Fatalistic did not make a unique contribution to the hierarchical regression model.

Table 4.4

Hierarchical Regression Analysis: Mindfulness, Time Perspective Predicting Perceived Helplessness

Variable	*b*	SE *b*	β	*p*
Step One				
Age	0.01	0.02	.04	0.669

	Gender	0.02	0.15	.01	0.900
R	0.04				
R^2	0.00				
ΔR^2	0.00				
Step Two					
	Age	0.00	0.01	.00	.943
	Gender	0.04	0.12	.02	.757
	Mindfulness	-0.21**	0.07**	-.23**	.002**
	Past Negative	0.48**	0.07**	.53**	.000**
	Present Hedonistic	-0.08	0.11	-.05	.507
	Future	0.11	0.10	.08	.205
	Past Positive	0.19**	0.07**	.19**	.009**
	Present Fatalistic	-0.01	10.10	-.01	.933
R	0.63**				
R^2	0.39**				
ΔR^2	0.39**				

Note. b = Unstandardized Coefficient Beta. SE *b* = Standardized Coefficients Standard Error. β = Standardized Coefficients Beta. ΔR^2 = Change in R squared. *p* = Significance p-value, $p < 0.05$*, $p < 0.01$**

An individual hierarchical regression analysis was conducted to evaluate whether age, gender, mindfulness and Time Perspective frames predicted Perceived Insufficient Self-Efficacy sub-dimension of stress. In Step One, demographics such as age and gender were not significant predictors of Perceived Insufficient Self-Efficacy sub-dimension of stress, $F(2,139) = 0.416$, $p = 0.66$. In Step Two, demographics with the addition of mindfulness and Time Perspectives were significant, $F(8,133) = 9.589$, $p < 0.001$. As can be seen in Table 4.5, two of the Time Perspective frames had significant positive regression weights, indicating that higher Past Negative and Present Fatalism exhibit higher Perceived Insufficient Self-Efficacy sub-dimension of stress. Mindfulness, Present

Hedonistic, and Future had a significant negative regression weight, indicating that higher mindfulness, Present Hedonistic, and Future exhibit lower Perceived Insufficient Self-Efficacy in overall stress. Time Perspective and Mindfulness account for 36.0 % of the variance in the Perceived Helplessness sub-dimension of stress. As seen in Table 4.5, demographics and Past Positive did not make a unique contribution to the hierarchical regression model.

Table 4.5

Hierarchical Regression Analysis: Mindfulness, Time Perspective Predicting Perceived Insufficient Self-Efficacy

Variable		*b*	SE *b*	β	*p*
Step One					
Age		-0.01	0.01	-.07	0.382
Gender		0.02	0.14	.01	0.871
R	0.08				
R^2	0.01				
ΔR^2	0.01				
Step Two					
Age		-0.01	0.01	-.09	.220
Gender		-0.01	0.12	-.01	.970
Mindfulness		-0.20**	0.06**	-.24**	.002**
Past Negative		0.20**	0.07**	.24**	.004**
Present Hedonistic		-0.37**	0.11**	-.25**	.001**
Future		-0.24**	0.09**	-.19**	.000**
Past Positive		0.09	0.07	.09	.211
Present Fatalistic		0.19*	0.09*	.17*	.038*
R	0.60**				
R^2	0.37**				
ΔR^2	0.36**				

Note. b = Unstandardized Coefficient Beta. SE *b* = Standardized Coefficients Standard Error. β = Standardized Coefficients Beta. ΔR^2 = Change in R squared. *p* = Significance p-value, $p < 0.05$*, $p < 0.01$**

4.4 HIERARCHICAL REGRESSION ANALYSIS: MINDFULNESS, TIME PERSPECTIVE, SELF-CONTROL

A hierarchical regression analysis was conducted to evaluate whether Age, Gender, mindfulness and Time Perspective predicted total Self-Control. In Step One, age and gender were not a significant predictor of total Self-Control, $F(2,132) = 1.401$, $p = 0.25$. In Step Two, the hierarchical regression model with the demographics, mindfulness, and Time Perspective were significant predictors of total Self-Control $F(8,126) = 5.001$, $p < 0.001$. As can be seen in Table 4.6, two of the Time Perspective frames had significant positive regression weights, indicating that higher Future and Past Positive exhibit higher overall Self-Control after controlling for the other variables in the model. Present Fatalistic has a significant negative weight, indicating that higher Present Fatalistic scores displayed lower Self-Control after controlling for the other variables. Mindfulness and Time Perspective account for 22.0 % of the variance in total Self-Control. Demographics, mindfulness, Past Negative and Present Hedonistic did not present a unique contribution to the hierarchical regression model.

Table 4.6

Hierarchical Regression Analysis: Mindfulness, Time Perspective Predicting Overall Self-Control

Variable	*b*	SE *b*	β	*p*
Step One				
Age	0.01	0.01	.06	0.504
Gender	-0.21	0.14	-.13	0.146

R	0.14				
R^2	0.02				
ΔR^2	.01				
Step Two					
	Age	0.00	0.01	.01	.862
	Gender	-0.23	0.13	-.13	.096
	Mindfulness	0.05	0.07	.06	.474
	Past Negative	0.10	0.08	.12	.186
	Present Hedonistic	0.09	0.13	.06	.494
	Future	0.40**	0.11**	.31**	.000**
	Past Positive	0.18*	0.08*	.18*	.029*
	Present Fatalistic	-0.26*	0.10*	-.23*	.014*
R	0.49**				
R^2	0.24**				
ΔR^2	0.22**				

Note. b = Unstandardized Coefficient Beta. SE *b* = Standardized Coefficients Standard Error. β = Standardized Coefficients Beta. ΔR^2 = Change in R squared. *p* = Significance p-value, $p < 0.05$*, $p < 0.01$**

A separate hierarchical regression analysis was conducted to evaluate whether Age, Gender, mindfulness and Time Perspective predicted the Self-Evaluating sub-dimension of Self-Control. In Step One, age and gender were not significant predictors of the Self-Evaluating sub-dimension of Self-Control, $F(2,137) = 0.292$, $p = 0.75$. In Step Two, the demographics, mindfulness, and Time Perspectives were not significant predictors of the Self-Evaluating sub-dimension of Self-Control, $F(8,131) = 1.847$, $p = 0.07$. As seen in Table 4.7, none of the variables had a sufficient contribution to make the overall hierarchical regression model significant.

Table 4.7

Hierarchical Regression Analysis: Mindfulness, Time Perspective Predicting Self-Evaluating Sub-Dimension of Self-Control

Variable		*b*	SE *b*	β	*p*
Step One					
Age		0.00	0.02	.00	0.974
Gender		-0.12	0.15	-.06	0.451
R	0.06				
R^2	0.00				
ΔR^2	.00				
Step Two					
Age		-0.01	0.02	-.04	.656
Gender		-0.12	0.15	-.07	.453
Mindfulness		0.03	0.09	.03	.716
Past Negative		0.08	0.09	.09	.365
Present Hedonistic		-0.15	0.14	-.09	.301
Future		0.15	0.12	.10	.236
Past Positive		0.19*	0.09*	.18*	.040*
Present Fatalistic		-0.25*	0.12*	-.23*	.042*
R	0.32				
R^2	0.10				
ΔR^2	0.10				

Note. b = Unstandardized Coefficient Beta. SE *b* = Standardized Coefficients Standard Error. β = Standardized Coefficients Beta. ΔR^2 = Change in R squared. *p* = Significance p-value, $p < 0.05$*, $p < 0.01$**

A separate hierarchical regression analysis was conducted to evaluate whether Age, Gender, mindfulness and Time Perspective predicted Self-

Reinforcing sub-dimension of Self-Control. In Step One, age and gender were not significant predictors of the Self-Reinforcing sub-dimension of Self-Control, $F(2,139) = 0.450$, $p = 0.64$. In Step Two, the hierarchical regression model with the demographics, mindfulness, and Time Perspectives were significant predictors of Self-Reinforcing sub-dimension of Self-Control $F(8,133) = 2.618$, $p = 0.01$. Higher Past Positive indicates higher Self-Reinforcing after controlling for all other variables. Present Fatalistic has a significant negative weight, exhibiting that higher Present Fatalistic scores show lower Self-Monitoring after controlling for all other variables in the analysis. Mindfulness and Time Perspective account for 13.0 % of the variance in Self-Reinforcing sub-dimension of Self-Control. As seen in Table 4.8, Demographics, mindfulness, Past Negative, Present Hedonistic, and Future did not make a unique contribution to the hierarchical regression model.

Table 4.8

Hierarchical Regression Analysis: Mindfulness, Time Perspective Predicting Self-Reinforcing Sub-Dimension of Self-Control

Variable		*b*	SE *b*	β	*p*
Step One					
Age		-0.00	0.02	-.01	0.859
Gender		-0.18	0.19	-.08	0.346
R	0.08				
R^2	0.01				
ΔR^2	.01				
Step Two					
Age		-0.01	0.02	-.04	.612
Gender		-0.14	0.19	-.06	.461
Mindfulness		-0.01	0.11	-.01	.895
Past Negative		0.15	0.11	.13	.169

	Present Hedonistic	0.23	0.18	.11	.202
	Future	0.30*	0.15*	.17*	.049*
	Past Positive	0.21	0.11	.16	.070
	Present Fatalistic	-0.42*	0.15*	-.27*	.006*
R	0.37*				
R^2	0.14*				
ΔR^2	0.13*				

Note. b = Unstandardized Coefficient Beta. SE *b* = Standardized Coefficients Standard Error. β = Standardized Coefficients Beta. ΔR^2 = Change in R squared. *p* = Significance p-value, $p < 0.05$*, $p < 0.01$**

A separate hierarchical regression analysis was conducted to evaluate whether Age, Gender, mindfulness and Time Perspective predicted Self-Monitoring sub-dimension of Self-Control. In Step One, age and gender were not significant predictors of the Self-Monitoring sub-dimension of Self-Control, $F(2,134) = 2.048$, $p = 0.13$. In Step Two, the hierarchical regression model with demographics, mindfulness, and Time Perspective were significant predictors of Self-Monitoring sub-dimension of Self-Control, $F(8, 128) = 6.009$, $p < 0.001$. As can be seen in Table 4.9, one of the Time Perspective frames had a significant positive regression weight, indicating that higher Future exhibit higher Self-Monitoring after controlling for all other variables in the model. Mindfulness and Time Perspective account for 24.0 % of the variance in Self-Monitoring sub-dimension of Self-Control. As seen in Table 4.9, demographics, mindfulness, Past Negative, Present Hedonistic, Past Positive, and Present Fatalism did not make a unique contribution to the hierarchical regression model.

Table 4.9

Hierarchical Regression Analysis: Mindfulness, Time Perspective Predicting Self-Monitoring Sub-Dimension of Self-Control

Variable		*b*	SE *b*	β	*p*
Step One					
Age		0.03	0.02	.13	0.139
Gender		-0.22	0.18	-.10	0.228
R	0.17				
R^2	0.03				
ΔR^2	.01				
Step Two					
Age		0.02	0.02	.10	.222
Gender		-0.26	0.17	-.13	.113
Mindfulness		0.10	0.09	.09	.270
Past Negative		0.03	0.10	.03	.744
Present Hedonistic		0.13	0.16	.06	.423
Future		0.68**	0.13**	.42**	.000**
Past Positive		0.04	0.10	.04	.653
Present Fatalistic		-0.18	0.13	-.13	.162
R	0.52**				
R^2	0.27**				
ΔR^2	0.24**				

Note. b = Unstandardized Coefficient Beta. SE *b* = Standardized Coefficients Standard Error. β = Standardized Coefficients Beta. ΔR^2 = Change in R squared. *p* = Significance p-value, $p < 0.05$*, $p < 0.01$**

4.5 HIERARCHICAL REGRESSION: MINDFULNESS, DEVIATION FROM BALANCED TIME PERSPECTIVE, AND STRESS

An individual hierarchical regression analysis was conducted to evaluate whether age, gender, mindfulness and Balanced Time Perspective predicted total stress. In Step One, age and gender were not significant predictors of total stress,

$F(2,136) = 0.879$, $p = 0.42$. In Step Two, demographics, mindfulness, and DBTP were significant predictors of overall stress, $F(4,134) = 0.481$, $p = 0.75$. As can be seen in Table 4.10, none of the variables made a sufficient contribution to make the overall hierarchical regression model significant.

Table 4.10

Hierarchical Regression Analysis: Mindfulness, Balanced Time Perspective Predicting Total Stress

Variable		*b*	SE *b*	β	*p*
Step One					
Age		0.01	0.01	.10	0.239
Gender		0.05	0.08	.06	0.500
R	0.11				
R^2	0.01				
ΔR^2	0.01				
Step Two					
Age		0.01	0.01	.11	0.228
Gender		0.06	0.08	.06	0.479
Mindfulness		0.02	0.04	.04	0.667
DBTP		0.01	0.04	.02	0.842
R	0.12				
R^2	0.01				
ΔR^2	0.00				

Note. *b* = Unstandardized Coefficient Beta. SE *b* = Standardized Coefficients Standard Error. β = Standardized Coefficients Beta. ΔR^2 = Change in R squared. *p* = Significance p-value, $p < 0.05$*, $p < 0.01$**

A separate hierarchical regression analysis was conducted to evaluate whether Age, Gender, mindfulness and Balanced Time Perspective predicted Perceived Helplessness in stress. In Step One, age and gender were not significant predictor of Perceived Helplessness, $F(3,136) = 0.096$, $p = 0.91$. In Step Two, demographics, mindfulness, and DBTP were significant predictors of Perceived Helplessness, $F(4,134) = 8.681$, $p < 0.001$. Higher levels of mindfulness exhibited lower levels of Perceived Helplessness while higher levels DBTP displayed higher levels of Perceived Helplessness. As can be seen in Table 4.11, mindfulness and DBTP account for 20 % of variance in Perceived Helplessness.

Table 4.11

Hierarchical Regression Analysis: Mindfulness, Balanced Time Perspective Predicting Perceived Helplessness

Variable		*b*	SE *b*	β	*p*
Step One					
Age		0.01	0.02	.04	0.669
Gender		0.02	0.15	.01	0.900
R	0.04				
R^2	0.00				
ΔR^2	0.00				
Step Two					
Age		0.01	0.01	.06	0.427
Gender		0.05	0.14	.03	0.728
Mindfulness		-0.23**	0.07**	-.25**	0.003**
DBTP		0.27**	0.07**	.30**	0.000**
R	0.45				
R^2	0.21				
ΔR^2	0.20				

Note. b = Unstandardized Coefficient Beta. SE *b* = Standardized Coefficients Standard Error. β = Standardized Coefficients Beta. ΔR^2 = Change in R squared. *p* = Significance p-value, $p < 0.05$*, $p < 0.01$**

A separate hierarchical regression analysis was conducted to evaluate whether Age, Gender, mindfulness and Balanced Time Perspective predicted Perceived Insufficient Self-Efficacy of stress. In Step One, age and gender were not a significant predictors of Perceived Insufficient Self-Efficacy, $F(2,139) = .416$, $p = 0.66$. In Step Two, demographics, mindfulness and DBTP were significant predictors of Perceived Insufficient Self-Efficacy $F(4,137) = 11.361$, $p < 0.001$. Higher levels of mindfulness exhibited lower levels of Insufficient Self-Efficacy. Additionally, higher levels of DBTP displayed higher levels of Insufficient Self-Efficacy. As can be seen in Table 4.12, mindfulness and DBTP account for 24.0 % of the variance of Insufficient Self-Efficacy.

Table 4.12

Hierarchical Regression Analysis: Demographics, Mindfulness, Balanced Time Perspective Predicting Perceived Insufficient *Self-Efficacy*

Variable		*b*	SE *b*	β	*p*
Step One					
Age		-0.01	0.01	-.07	.382
Gender		0.02	0.14	.01	.871
R	0.08				
R^2	0.01				
ΔR^2	0.01				
Step Two					
Age		-0.01	0.01	-.04	.595
Gender		0.04	0.12	.02	.751
Mindfulness		-0.24**	0.07**	-.29**	.000**

	DBTP	0.26**	0.07**	0.31**	.000**
R	0.50				
R^2	0.25				
ΔR^2	.24				

Note. b = Unstandardized Coefficient Beta. SE *b* = Standardized Coefficients Standard Error. β = Standardized Coefficients Beta. ΔR^2 = Change in R squared. *p* = Significance p-value, $p < 0.05$*, $p < 0.01$**.

4.6 HIERARCHICAL REGRESSION ANALYSIS: MINDFULNESS, DEVIATION FROM BALANCED TIME PERSPECTIVE, AND SELF-CONTROL

A separate hierarchical regression analysis was conducted to evaluate whether Age, Gender, mindfulness and DBTP predicted overall Self-Control. In Step One, age and gender were not significant predictors of total Self-Control, $F(2,132) = 1.401$, $p = 0.25$. In Step Two, the hierarchical regression model with the demographics, mindfulness, and DBTP were significant predictors of total Self-Control $F(4,130) = 2.854$, $p = 0.03$. As can be seen in Table 4.13, none of the variables made a unique contribution to the hierarchical regression model. But, mindfulness and DBTP account for 6.0 % of the variance in overall Self-Control.

Table 4.13

Hierarchical Regression Analysis: Demographics, Mindfulness, Balanced Time Perspective Predicting Overall Self-Control

Variable	*b*	SE *b*	β	*p*
Step One				
Age	0.01	0.01	.06	0.504
Gender	-0.21	0.14	-.13	0.146

R	0.14				
R^2	0.02				
ΔR^2	.02				
Step Two					
	Age	0.01	0.01	.04	.640
	Gender	-0.22	0.14	-.13	.130
	Mindfulness	0.11	0.08	.13	.149
	DBTP	-.15	.08	-.17	.059
R	0.28				
R^2	0.08				
ΔR^2	0.06				

Note. b = Unstandardized Coefficient Beta. SE *b* = Standardized Coefficients Standard Error. β = Standardized Coefficients Beta. ΔR^2 = Change in R squared. *p* = Significance p-value, $p < 0.05$*, $p < 0.01$**

A separate hierarchical regression analysis was conducted to evaluate whether Age, Gender, mindfulness and DBTP predicted Self-Evaluating sub-dimension of Self-Control. In Step One, age and gender were not significant predictors of Self-Evaluating sub-dimension of Self-Control, $F(2,137) = 0.292$, $p = 0.75$. In Step Two, the hierarchical regression model with the demographics, mindfulness, and DBTP were not significant predictors of Self-Evaluating sub-dimension of Self-Control, $F(4,135) = 1.508$, $p = 0.20$. As can be seen in Table 4.14, none of the variables contributed to the hierarchical regression model.

Table 4.14

Hierarchical Regression Analysis: Demographics, Mindfulness, Balanced Time Perspective Predicting Self-Evaluating Sub-Dimension of Self-Control

Variable	*b*	SE *b*	β	*p*

Step One					
	Age	0.00	0.02	.00	0.974
	Gender	-0.12	0.15	-.06	0.451
R	0.06				
R^2	0.00				
ΔR^2	0.00				
Step Two					
	Age	-0.01	0.02	-.02	.822
	Gender	-0.14	0.15	-.08	.369
	Mindfulness	0.05	0.08	.06	.519
	DBTP	-.16	.08	-.17	.064
R	0.21				
R^2	0.04				
ΔR^2	0.04				

Note. b = Unstandardized Coefficient Beta. SE *b* = Standardized Coefficients Standard Error. β = Standardized Coefficients Beta. ΔR^2 = Change in R squared. *p* = Significance p-value, $p < 0.05$*, $p < 0.01$**

A separate hierarchical regression analysis was conducted to evaluate whether Age, Gender, mindfulness and DBTP predicted Self-Reinforcing sub-dimension of Self-Control. In Step One, age and gender were not significant predictors of Self-Reinforcing sub-dimension of Self-Control, $F(2,139) = 0.450$, $p = 0.64$. In Step Two, the hierarchical regression model with the demographics, mindfulness, and DBTP were also not significant predictors of the Self-Reinforcing sub-dimension of Self-Control, $F(4,137) = 1.104$, $p = 0.36$. As seen in Table 4.15, none of the variables contributed to this model.

Table 4.15

Hierarchical Regression Analysis: Mindfulness, Balanced Time Perspective Predicting Self-Reinforcing Sub-Dimension of Self-Control

Variable		*b*	SE *b*	β	*p*
Step One					
Age		-0.01	0.02	-.01	0.859
Gender		-0.18	0.19	-.08	0.346
R	0.08				
R^2	0.01				
ΔR^2	.01				
Step Two					
Age		-0.01	0.02	-.04	.697
Gender		-0.20	0.20	-.09	.298
Mindfulness		0.06	0.11	.05	.591
DBTP		-.16	.11	-.13	.140
R	0.18				
R^2	0.03				
ΔR^2	0.03				

Note. *b* = Unstandardized Coefficient Beta. SE *b* = Standardized Coefficients Standard Error. β = Standardized Coefficients Beta. ΔR^2 = Change in R squared. *p* = Significance p-value, $p < 0.05$*, $p < 0.01$**

A separate hierarchical regression analysis was conducted to evaluate whether age, gender, mindfulness and DBTP predicted Self-Monitoring sub-dimension of Self-Control. In Step One, age and gender were not significant predictors of the Self-Monitoring sub-dimension of Self-Control, $F(2,134) = 2.048$, $p = 0.13$. In Step Two, demographics, mindfulness, and DBTP were significant predictors of Self-Monitoring sub-dimension of Self-Control, $F(4,132) = 3.299$, $p = 0.013$. Higher level of mindfulness exhibited higher level of Self-Monitoring. DBTP did not exhibit a unique contribution to the model. Mindfulness and Balanced Time Perspective account for 6 % of the variance in

the overall model. As seen in Table 4.16, Demographics did not contribute to this model.

Table 4.16

Hierarchical Regression Analysis: Mindfulness, Balanced Time Perspective Predicting Self-Monitoring Sub-Dimension of Self-Control

Variable		*b*	SE *b*	β	*p*
Step One					
Age		0.03	0.02	.13	0.139
Gender		-0.22	0.18	-.10	0.228
R	0.17				
R^2	0.03				
ΔR^2	.03				
Step Two					
Age		0.03	0.02	.12	.163
Gender		-0.21	0.18	-.10	.245
Mindfulness		0.20	0.10	.18	.041
DBTP		-0.13	0.10	-.12	.184
R	0.30				
R^2	0.09				
ΔR^2	0.06				

Note. b = Unstandardized Coefficient Beta. SE *b* = Standardized Coefficients Standard Error. β = Standardized Coefficients Beta. ΔR^2 = Change in R squared. *p* = Significance p-value, $p < 0.05$*, $p < 0.01$**

4.7 MEDIATION EFFECT BETWEEN MINDFULNESS AND STRESS THROUGH TIME PERSPECTIVE

Six multiple mediation analyses were conducted through Process Macro with the application of the bootstrapping method to display a 95% confidence interval of the indirect effect using 5000 bootstrap samples (Preacher & Hayes, 2008). Time Perspective frames were tested as the mediators between mindfulness, the independent variable, and stress as the dependent variable. Path a exhibits the effect between mindfulness and Time Perspective, while path b exhibits the effect between Time Perspective and stress. Total effect, c, is the influence of all the variables in the direct and indirect effect on stress. The indirect effect, ab, illustrated as the mediation effect consisting of the multiplication of path a and b, is the influence of mindfulness on stress through the corresponding Time Perspectives. The direct effect, c', is the influence of mindfulness on stress excluding the involvement of the mediators.

Past Negative, Present Hedonism and Future were tested as mediators in the mediation analysis for overall stress after displaying a significant amount of variance in the hierarchical regression. Present Fatalism, Past Positive, and DBTP were not tested for mediation because they were not significant predictors in the hierarchical regression analysis. The bootstrap method shows with 95% confidence the indirect effect between mindfulness and stress through Past Negative and Future. Present Hedonism did not exhibit a mediating effect between mindfulness and overall Stress. These results are displayed in Table 4.17.

Table 4.17

Indirect Effects of Mindfulness on Overall Stress through Time Perspective Frames

Time Perspective	Indirect effect of mediation	Confidence Intervals (95%) Lower	Upper
Past Negative	-0.0309*	-0.0736*	-0.0040*
Present Hedonism	0.0038	-0.0195	0.0299
Future	0.0238*	0.0027*	0.0660*

*Indirect effect is significant

Higher levels of mindfulness exhibits lower levels of Past Negative (a = -0.286). Past Negative Tp exhibits higher levels of overall stress (b = 0.108). A bias-corrected bootstrap confidence interval for a significant indirect effect supports the mediation between mindfulness and overall stress through Past Negative TP. This can be seen in Figure 4.1 and Table 4.18.

Higher levels of mindfulness exhibit higher levels of Future TP (a = 0.127). Higher levels of Future exhibit higher levels of total stress (b = 0.188). A bias-corrected bootstrap confidence interval for a significant indirect effect illustrates the mediation effect between mindfulness and overall stress through Future TP. This can be seen in Figure 4.1 and Table 4.18.

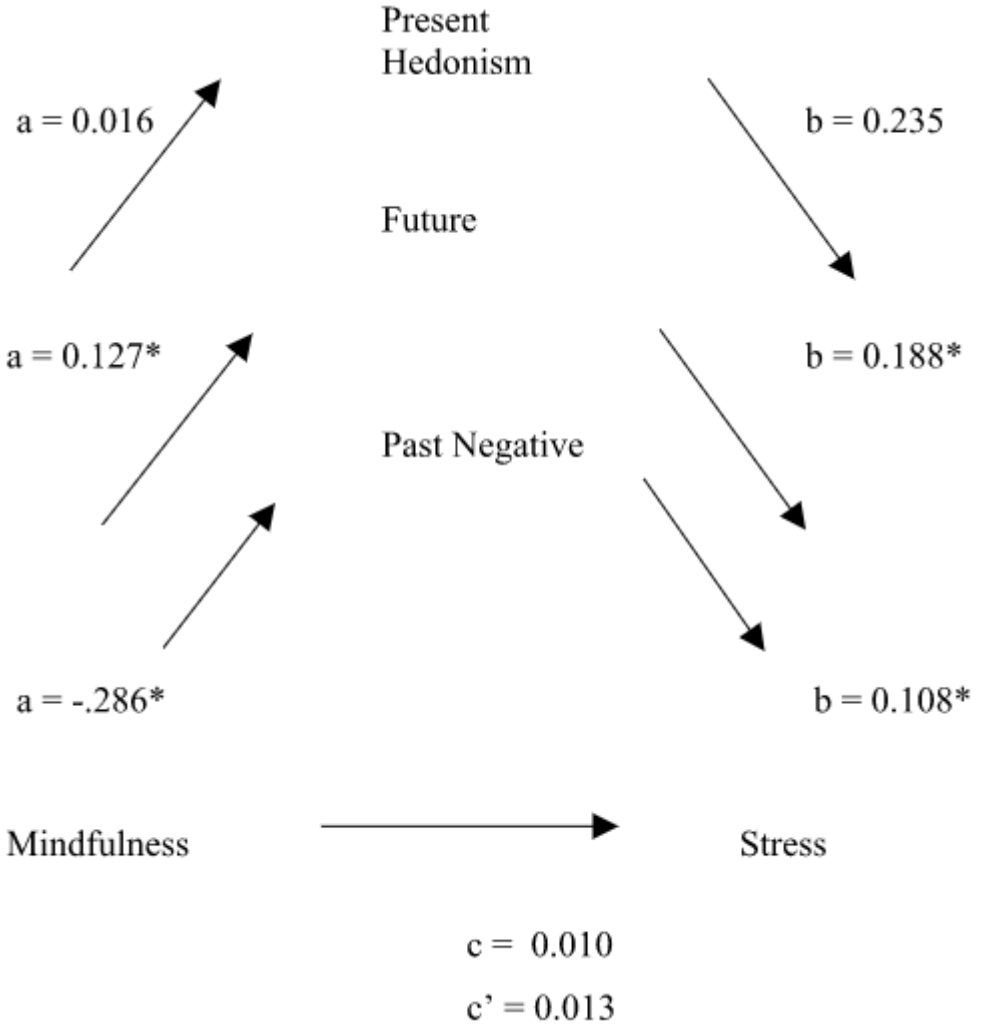

Figure 4.1

Mediation Effect Between Mindfulness and Overall Stress Through Time Perspective

A separate mediation analysis was conducted to examine the mediation effect of Time Perspective between mindfulness and Perceived Helplessness sub-dimension of stress. Past Negative, Past Positive, and DBTP were tested as mediators in the mediation analysis for Perceived Helplessness in overall stress after displaying a significant amount of variance in the hierarchical regression. Present Fatalistic, Present Hedonistic and Future TP were not tested for mediation because they were not significant predictors in the hierarchical regression analysis. The bootstrap method shows with 95% confidence that there is an indirect effect between mindfulness and Perceived Helplessness through Past Negative and DBTP. Past Positive Time Perspective did not exhibit a mediating effect between mindfulness and Perceived Helplessness. These results are displayed in Table 4.18 and Figure 4.2.

Table 4.18

Indirect Effects of Mindfulness on Perceived Helplessness through Time Perspective Frames

Time Perspective	Indirect effect of mediation	Confidence Intervals (95%) Lower	Upper
Past Negative	-0.134*	-0.2312*	-0.0473*
Past Positive	-0.0101	-0.0112	0.0465
Deviation from BTP	-0.0916*	-0.1829*	-0.0330*

Note. Devation from BTP was tested separately for a mediation analysis.
*Indirect effect is significant

Higher levels of mindfulness leads to lower levels of Past Negative TP (a = -0.286). Past Negative TP exhibits higher levels of Perceived Helplessness (b =

0.466). A bias-corrected bootstrap confidence interval for a significant indirect effect exhibits a mediation effect between mindfulness and Perceived Helplessness of stress through Past Negative TP.

Higher levels of mindfulness leads to lower levels of Deviation from BTP (a = -0.336). Higher levels of Deviation from BTP exhibits higher levels of Perceived Helplessness (b = -0.233). A bias-corrected bootstrap confidence interval for a significant indirect effect exhibits a mediation effect between mindfulness and Perceived Helplessness of overall Stress through Deviation from BTP.

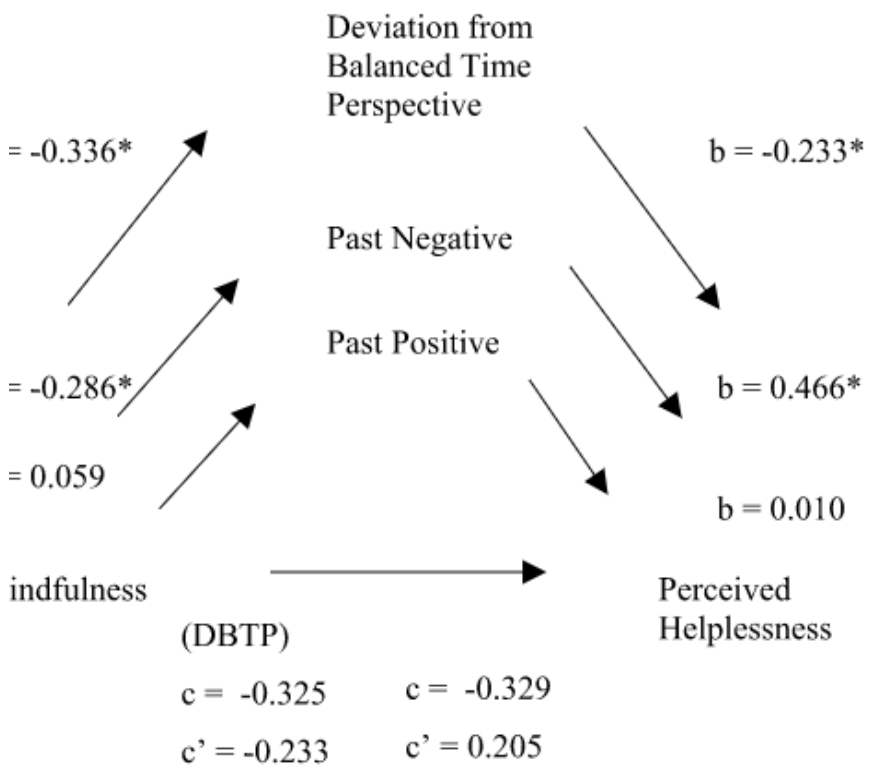

Figure 4.2

Mediation Effect between Mindfulness and Perceived Helplessness through Time Perspective

Past Negative, Present Hedonism, Future and Deviation from BTP were tested as mediators in the mediation analysis for Perceived Insufficient Self-Efficacy in overall stress after displaying a significant amount of variance in the

hierarchical regression. Present Fatalistic and Past Positive TP were not tested for mediation because they were not significant predictors in the hierarchical regression analysis. An indirect effect based on a 95% bootstrap interval shows a mediation effect between mindfulness and Perceived Insufficient through Past Negative, Future, Present Fatalism, and Deviation from BTP. Present Hedonism did not exhibit a mediating effect between mindfulness and Perceived Insufficient Self-Efficacy. These results are displayed in Table 4.19 and Figure 4.3.

Table 4.19

Indirect Effects of Mindfulness on Perceived Insufficient Self-Efficacy through Time Perspective Frames

Time Perspective	Indirect effect of mediation	Confidence Intervals (95%) Lower	Upper
Past Negative	-0.0553*	-0.1213*	-0.0152*
Present Hedonism	0.0001	-0.0337	0.0425
Future	-0.0315*	-0.0792*	-0.0013*
Present Fatalism	-0.0561*	-0.1279*	-0.0026*
Deviation from BTP	-0.0918*	-0.1752*	-0.0397*

Note. Devation from BTP was tested separately for a mediation analysis.
*Indirect effect is significant

Higher levels of mindfulness leads to lower levels of Past Negative TP (a = -0.297). Past Negative TP exhibits higher levels of Perceived Insufficient Self-Efficacy (b = 0.186). A bias-corrected bootstrap confidence interval for a significant indirect effect exhibits a mediation effect between mindfulness and Perceived Insufficient Self-Efficacy of overall stress through Past Negative TP. Higher levels of mindfulness leads to higher levels of Future TP (a = 0.127). Future TP exhibits lower levels of Perceived Insufficient Self-Efficacy (b = -

0.231). A bias-corrected bootstrap confidence interval for a significant indirect effect exhibits a mediation effect between mindfulness and Perceived Insufficient Self-Efficacy of overall Stress through Future TP.

Higher levels of mindfulness leads to lower levels of Present Fatalism TP (a = -0.294). Present Fatalism TP exhibits higher levels of Perceived Insufficient Self-Efficacy (b = 0.191). A bias-corrected bootstrap confidence interval for a significant indirect effect exhibits a mediation effect between mindfulness and Perceived Insufficient Self-Efficacy of overall Stress through Present Fatalism TP. Higher levels of mindfulness leads to lower levels of Deviation from BTP (a = -0.349). Deviation from BTP exhibits higher levels of Perceived Insufficient Self-Efficacy (b = 0.263). A bias-corrected bootstrap confidence interval for a significant indirect effect exhibits a mediation effect between mindfulness and Perceived Insufficient Self-Efficacy of overall stress through Deviation from Balanced TP.

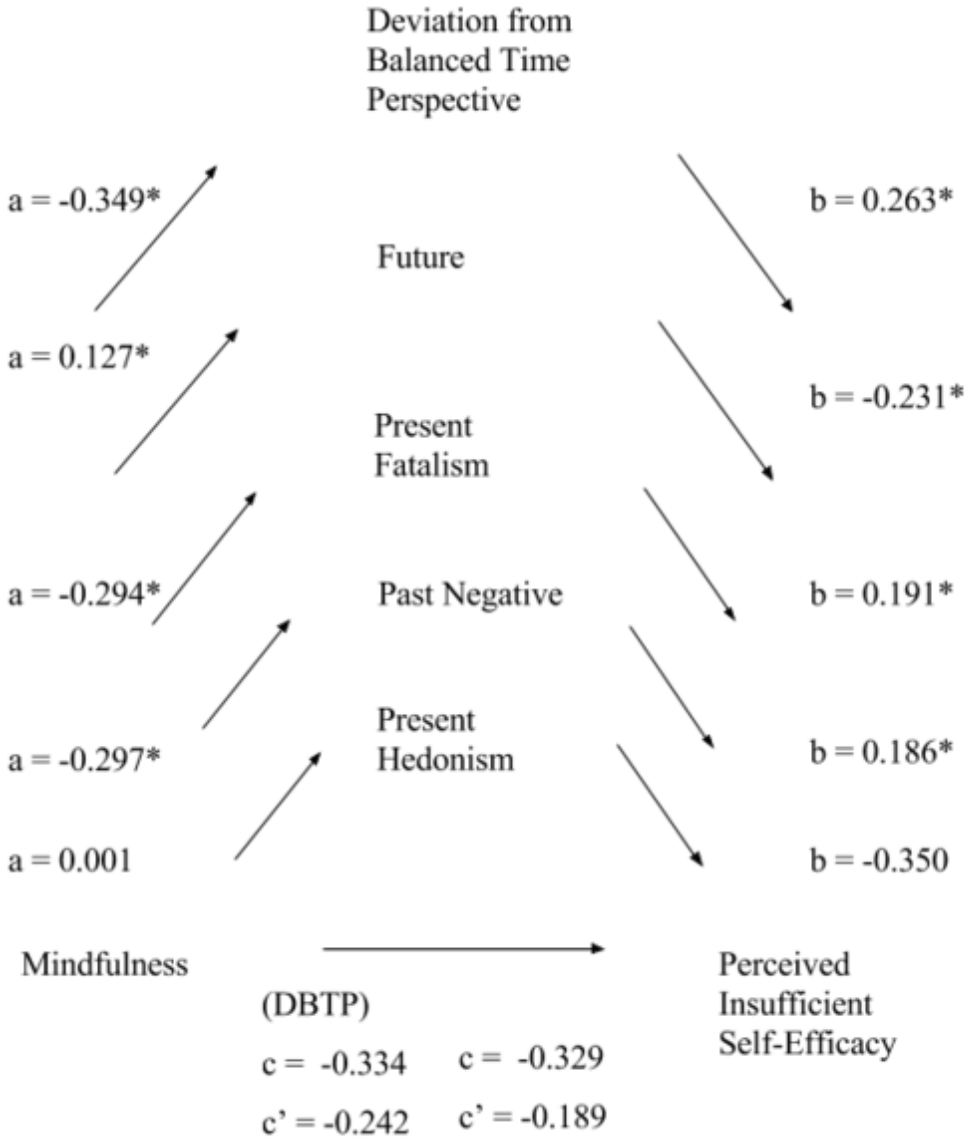

Figure 4.3

Mediation Effect Between Mindfulness and Perceived Insufficient Self-Efficacy Through Time Perspective

4.8 MEDIATION EFFECT OF DEVIATION TIME PERSPECTIVE BETWEEN MINDFULNESS AND SELF-CONTROL

Past Positive, Present Fatalistic and Past Positive Time Perspectives were tested as mediators in the mediation analysis for overall Self-Control after displaying a significant amount of variance in the hierarchical regression. Present

Hedonism, Past Negative, and Deviation from Balanced TP were not tested for mediation because they were not significant predictors in the hierarchical regression analysis. The bootstrap method shows with 95% confidence that there is a significant indirect effect in the mediation effect between mindfulness and overall Self-Control through Present Fatalistic. Past Positive and Future did not exhibit a mediating effect between mindfulness and overall Self-Control. These results are displayed in Table 4.20 and Figure 4.4.

Table 4.20

Indirect Effects of Mindfulness on overall Self-Control through Time Perspective Frames

Time Perspective	Indirect effect of mediation	Confidence Intervals (95%) Lower	Upper
Past Positive	0.0096	-0.0089	0.0487
Present Fatalistic	0.0613*	0.0127*	0.1250*
Future	0.0354*	0.0002*	0.1164*

*Indirect effect is significant

Higher levels of mindfulness exhibit higher levels of Future (a = 0.126). Higher levels of Future exhibits higher levels of overall Self-Control (b = 0.386). A bias-corrected bootstrap confidence interval for a significant indirect effect exhibits a mediation effect between mindfulness and overall Self-Control through Future.

Higher levels of mindfulness exhibit lower levels of Present Fatalistic (a = -0.273). Higher levels of Present Fatalistic TP exhibits lower levels of overall Self-Control (b = -0.224). A bias-corrected bootstrap confidence interval for a significant indirect effect exhibits a mediation effect between mindfulness and total Self-Control through Present Fatalistic.

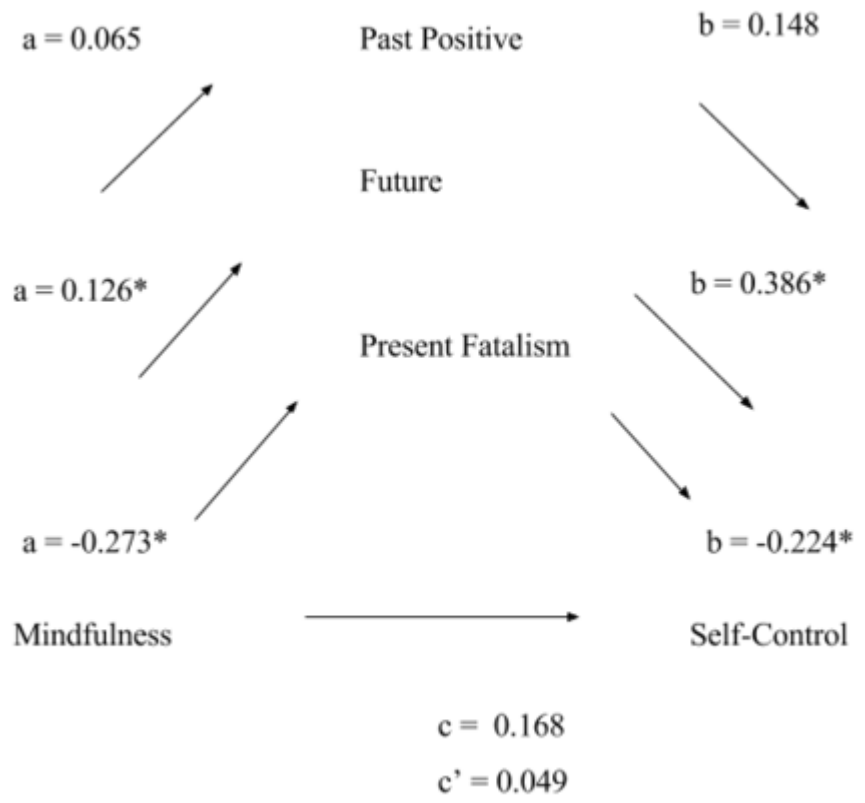

Figure 4.4

Mediation Effect between Mindfulness and Self-Control through Time Perspective

None of the Time Perspectives exhibited a significant amount of variance in the hierarchical regression therefore, none were tested as mediators in the mediation analysis between mindfulness and Self-Evaluating.

Present Fatalistic, and Future Time Perspectives were tested as mediators in the mediation analysis for the Self-Reinforcing sub-dimension of Self-Control after displaying a significant amount of variance in the hierarchical regression. Present Hedonism, Past Negative, Past Positive, Future, and Deviation from Balanced TP were not tested for mediation because they were not significant predictors in the hierarchical regression analysis. The bootstrap method with a 95% confidence shows a significant indirect effect to exhibit a mediation effect between mindfulness and Self-Reinforcing dimension through Present Fatalistic and Future. These results are displayed in Table 4.21 and Figure 4.5.

Table 4.21

Indirect Effects of Mindfulness on Self-Reinforcing through Time Perspective Frames

Time Perspective	Indirect effect of mediation	Confidence Intervals (95%) Lower	Upper
Future	0.0356	0.0005	0.1154
Present Fatalistic	0.0485*	0.0049*	0.1589*

*Indirect effect is significant

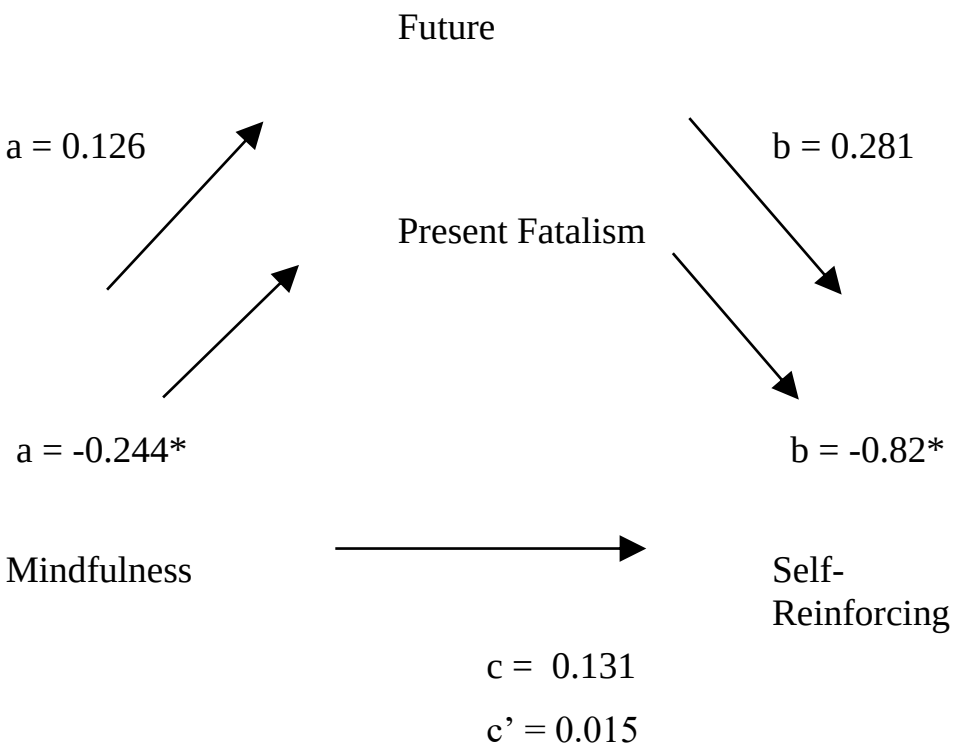

Figure 4.5

Mediation Effect between Mindfulness and Self-Reinforcing through Time Perspective

Higher levels of mindfulness exhibit lower levels of Present Fatalistic TP (a = -0.244). Higher levels of Present Fatalistic exhibits lower levels of Self-Reinforcing (b = -0.282). A bias-corrected bootstrap confidence interval for a

significant indirect effect exhibits a mediation effect between mindfulness and Self-Reinforcing sub-dimension of Self-Control through Present Fatalistic TP. Higher levels of mindfulness exhibit higher levels of Future (a = 0.126). Higher levels of Future exhibits higher levels of Self-Reinforcing (b = 0.281). A bias-corrected bootstrap confidence interval for a significant indirect effect exhibits a mediation effect between mindfulness and Self-Reinforcing sub-dimension of Self-Control through Future.

Future was tested as a mediator in the mediation analysis for the Self-Monitoring sub-dimension of Self-Control after displaying a significant amount of variance in the hierarchical regression. Present Hedonism, Past Negative, Past Positive, Present Fatalism, and Deviation from Balanced Time Perspective were not tested for mediation because they were not significant predictors in the hierarchical regression analysis. The bootstrap method shows with 95% confidence that a significant indirect effect exhibits a mediation effect between mindfulness and Self-Monitoring through Future. These results are displayed in Table 4.22 and Figure 4.6.

Table 4.22

Indirect Effects of Mindfulness on Self-Monitoring through Time Perspective Frames

Time Perspective	Indirect effect of mediation	Confidence Intervals (95%) Lower	Upper
Future	0.0888*	0.0071*	0.1972*

*Indirect effect is significant

Higher levels of mindfulness leads to lower levels of Present Fatalistic TP (a = -0.201). Higher levels of Present Fatalistic TP exhibits lower levels of Self-Monitoring sub-dimension of Self-Control (b = -0.319). A bias-corrected bootstrap confidence interval for a significant indirect effect exhibits the

mediation of mindfulness on Self-Reinforcing sub-dimension of Self-Control through Present Fatalistic TP.

Higher levels of mindfulness leads to higher levels of Future TP (a = 0.087). Higher levels of Future TP exhibits higher levels of Self-Monitoring sub-dimension of Self-Control (b = 0.817). A bias-corrected bootstrap confidence interval for a significant indirect effect exhibits the mediation of mindfulness of Self-Monitoring sub-dimension of Self-Control through Future TP.

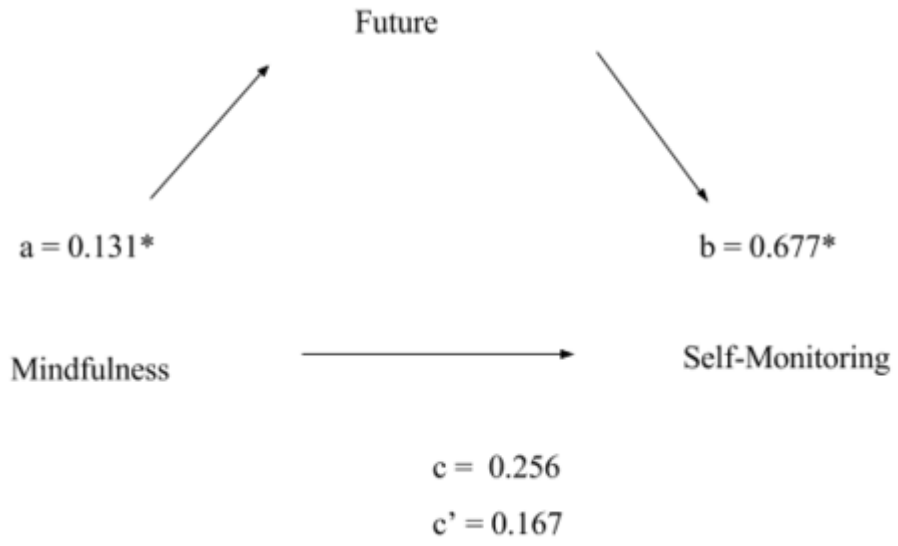

Figure 4.6

Mediation Effect between Mindfulness and Self-Monitoring through Time Perspective

Overall, findings show that the mediation effect of time perspective between mindfulness and stress varied. Higher levels of mindfulness indicate lower levels of overall stress through the mediating effect of Past Negative. On the other hand, higher levels of mindfulness indicate higher levels of overall stress through Future. Higher levels of mindfulness indicate lower levels of perceived helplessness through the mediating effect of Past Negative and Deviation from Balanced Time Perspective. Higher levels of mindfulness indicate lower levels of perceived insufficient self-efficacy through Past Negative, Future, Present Fatalism, and Deviation from Balanced Time Perspective. Findings also showed

the mediation effect for numerous time perspectives between mindfulness and self-control. Higher levels of mindfulness indicate higher levels of self-control through Present Fatalistic and Future. Higher levels of mindfulness indicate higher levels of Self-Reinforcing through Present Fatalistic and Future. Higher levels of mindfulness indicate higher levels of Self-Monitoring through Future.

CHAPTER 5
DISCUSSION

5.1 Key findings of the study

Time Perspective demonstrates an individual's perspective towards the past, present, and future. Taking a closer look at the present, mindfulness lies at the foundational basis of the present time frame. The aim of the current paper was to explore Time Perspective and Balanced Time Perspective, with regards to mindfulness and observe its link to Stress and Self-Control. The questions of the study were as follows (1) Did all five Time Perspectives and Balanced Time Perspective play a mediating role between mindfulness and Stress, (2) Did mindfulness, any of the five Time Perspective, and Balanced Time Perspective account for any variance in Self-Control, and (3) If any of the Time Perspectives and Balanced Time Perspective account for any variance in Self-Control, did they play a mediating role between mindfulness and Self-Control. The results supported some of the hypotheses and they are discussed below.

5.1.1 Relationship between Time Perspective and Mindfulness

Consistent with Boniwell (2005), Past Negative was found to have a significant negative correlation with mindfulness. Mindfulness was also found to be associated with lower levels of Present Fatalism. This was surprising considering that its underlying construct is defined through the present. However, Present Fatalism was found to be associated with higher levels of Past Negative and Present Hedonism. This is similar to findings by Seema (2014), who claims that the present orientations may be linked to positive or negative memories and anticipations. In that study, Present Hedonism is not found to be a predictor of higher well-being. Considering that mindfulness is widely recognized for its positive association with well-being, this may give some indication as to why Present Hedonistic was highly associated with Past Negative and did not exhibit a

relationship with mindfulness in the current study. Though there was a negative correlation between Present Hedonism and Mindfulness, it was not a significant relationship.

There was a positive but non-significant relationship between Past Positive and mindfulness. This was a similar finding in the study by Vowinckel (2012) but it also contradicts the results of Drake et al. (2008). Our findings show Past Positive was found to have a significant positive correlation with BTP, providing further reason for it to be associated with mindfulness. However, these non-significant findings may be due to the low reliability of the scale or the cross-cultural differences in the current study.

Similar to findings by Seema (2014), Future TP was found to have a significant positive correlation with mindfulness. This was understandable considering Zhang (2013) found Future TP to be highly correlated with subjective well-being, which is independently shown to be a strong indication of mindfulness (Stolarski, et al., 2016). Research shows the future time frame to be associated with a positive mindset (Kazakina, 1999) and conscientiousness (Zimbardo & Boyd, 1999). Individuals displaying high conscientiousness are found to be mindful through impulse regulation and momentary awareness, (Boyce & Sawang, 2014).

5.1.2 Relationship between Balanced Time Perspective and Mindfulness

Past research shows that there is a strong positive link between mindfulness and BTP (Drake et al., 2008; Seema, 2014; Vowinckel, 2012; Wiberg et al., 2012) and the current study supports these findings. The theory of Balanced Time Perspective (Zimbardo & Boyd, 2008) draws on a combination of time perspectives and our findings show that BTP was associated with lower levels of Past Negative and Present Fatalism, and higher levels of Future and Past Positive. Similar to mindfulness, BTP was significantly negatively related to Past Negative and Present Fatalism and positively related to Future. Features of BTP illustrate the individual to have a positive view of the past, which provides foundation for a

positive view of the present and motivation for a positive attitude towards the future (Sircova & Mitina, 2008).

5.1.3 Relationship between Time Perspective, Mindfulness, and Stress

Research exhibits the significant role of Time Perspective in Stress across cultures and various contexts (Anagnostopoulos & Griva, 2012; Papastamatelou et al., 2015). Our findings show that Present Hedonism, Future and Past Negative Time Perspectives predicted higher levels of overall Stress. Zimbardo & Boyd (1999) note that an elevated pursuit for pleasure may increase the likelihood of adverse feelings caused by impulsivity prone behavior and lack of ability to strategize for future events. Individuals are found to have low impulse control and are sensation seeking. Although these individuals display a greater amount of energy, they also exhibit more emotional instability. Present Hedonists are found to display more aggressive and depressive emotions (Gruber et al., 2012). The current study suggest support for these previous findings by exhibiting Present Hedonism to predict higher overall Stress. However, reasons that it was not observed as a mediating mechanism may be due to cultural factors. Rather than a present-oriented time frame, the current study suggests that other time perspectives aside from Present Hedonism may play a mediating role between mindfulness and stress. Samples from the Turkish culture are found to have lower levels of mindfulness as compared to other cultures (Ozyesil, 2011). This study suggests that collectivistic cultures may prevent individuals from behaving mindful and raising awareness to the present moment.

As for Future TP, our findings contradict previous findings that claim Future TP to be associated with lower levels of stress (Ho & Yeung, 2016). However, Future TP was found to be associated with anxiety symptoms stemming from negative anticipation of the future (Astrom, Wiberg, Sircova, Wiberg, & Carelli, 2014). Future Time Perspective is characterized through the prioritization of future goals, rewards, and consequences. High concern for organization, ambition, and time pressure towards goal achievement is considerably a trigger

for stress. As stated previously, mindfulness and Future TP have a significant positive relationship. Mindfulness is often found to be related to lower levels of stress and negative affect (Gustafsson et al., 2015). However, research shows that individuals high in Future TP often sacrifice taking pleasure in the present for the purpose of goal achievement (Boniwell & Zimbardo, 2003). Mindfulness had a significant indirect effect on overall Stress through Future TP. Although individuals who experience a mindful mindset and have raised awareness exhibit higher Future TP, the current research suggests this TP to be a possible mechanism that may cause mindful individuals to exhibit higher overall Stress. Research shows Future TP to be highly associated with self-efficacy (Bernacki, Nockes-Malach, & Aleven, 2013). Self-efficacy, similar to mindfulness, is a strong predictor of well-being and reduced anxiety (Sosya & Wilcomb, 2013). The findings in this study support this by displaying Future TP to be the mediating mechanism between mindfulness and Perceived Insufficient Self-Efficacy.

Past Positive was the third Time Perspective that predicted overall Stress. This contradicts research that finds reminiscence to be associated with higher well-being and lower levels of stress (Cappeliez, O'Rourke & Chaudhury, 2005). Papastamatelou et al. (2015) found no difference between low and high overall stress in those with Past Positive TP. Although the foundation of this time frame is based on a nostalgic focus on past events, research shows that individuals with high Past Positive may exhibit introverted behavior and may not take part in risky behavior (Zimbardo & Boyd, 2008). Research claims that introverts are more prone to anxious feelings and stress (Dawaele & Furnham, 2000). Despite the positive view of the past, sentimentality may not appear to be an efficient coping mechanism for lower overall stress. Research shows students who use sentimental coping strategies against stress still reported high daily stress (Azizi, 2011). A positive attitude towards the past may not be enough to prevent high perceived level of stress. Our findings show that Past Positive predicts Perceived Helplessness sub-dimension of overall Stress.

Past Negative was a significant predictor of higher overall Stress. Past Negative is positively associated with high stress and anxiety (Papastamatelou et al., 2015) and our findings replicated previous findings. Past Negative was also found to be a significant predictor of high Perceived Helplessness and Insufficient Self-Efficacy. Research states that Past Negative reflects an overall negative attitude through the individual's traumatic experiences (Hollman & Silver, 1998; Zimbardo & Boyd, 2008). As mentioned earlier, Past Negative TP was found to have a significant negative relation to mindfulness. Considering Past Negative TP and overall stress to be related to higher levels of anxiety (Papastamatelou et al., 2015), the indirect effect observed between mindfulness and overall Stress through Past Negative TP in the current study supports and expands on the literature that finds higher levels of mindfulness to be linked to lower levels of Stress (Nyklicek & Kujipers, 2008). Furthermore, our hypothesis is supported by findings that show Past Negative to not only be a predictor of overall Stress but also play a mediating role between mindfulness and both of these sub-dimensions. These findings indicate additional support to research that shows mindfulness and self-efficacy to be significantly related to well-being reduced anxiety (Sosya & Wilcomb, 2013).

Present Fatalistic was not found to have a significant negative relationship with overall Stress. This contradicts findings that show Present Fatalistic to have a negative significant relationship with stress (Papastamatelou et al., 2015). However, Present Fatalism was found to have a positive significant relationship with the Perceived Helplessness sub-dimension of overall Stress. This is not surprising considering Zimbardo & Boyd (2008) defines Present Fatalism through an overall helpless and hopeless attitude towards life in general. Present Fatalistic TP is also associated with feelings of depression (Desmyter & Raedt, 2012). Present Fatalism was found to be a positive predictor of Perceived Helplessness and Perceived Insufficient Self-Efficacy sub-dimension of Stress. These findings support research indicating that helpless and hopeless attitude towards life is an essential element of the Present Fatalistic time frame (Stolarski et al., 2014).

5.1.4 Relationship between Balanced Time Perspective and Stress

Research shows that increased attention to the present is associated with decreased level of distress (Grunberg, 2003). Our findings support our hypothesis by exhibiting Deviation from Balanced Time Perspective to not only be a predictor of Perceived Helplessness and Perceived Insufficient Self-Efficacy but also play a mediating role between mindfulness and the Perceived Helplessness sub-dimension. As noted earlier, Balanced Time Perspective is strongly related to well-being (Drake et al., 2008). Well-being is often driven by positive mood, and this is observed as a cognitive coping mechanism against feelings of helplessness (Clark & Isen, 1982; Mikulincer, 1994). Positive affect utilizes less energy in the interpretation of a trivial situation whereas negative affect calls on a more aggressively analytic method of approach. Findings show Balanced Time Perspective to the mediating mechanism between higher levels of mindfulness and lower levels of stress, as well as both of its sub-dimensions.

5.1.5 Relationship between Mindfulness, Time Perspective, Self-Control

Findings show mindfulness to be positively correlated with Future TP (Seema, 2014) and this was replicated in our study. Research shows that individuals who are high in mindfulness also show emotional intelligence (Heidari & Morovati, 2016). This arises from their ability to adapt their behavior to the situation and modify pessimistic thoughts in order to yield healthy behavior. Future TP is a time frame that fundamentally functions on goals and consequences. Our findings support our hypothesis that Future TP was not only a positive predictor of overall Self-Control but was also a mediator between mindfulness and overall Self-Control. Considering the strong presence of self-regulation involved in mindfulness as well as future orientation, our findings support past research (Zebardast et al., 2011). Wittmann et al. (2011) found impulsivity to be negatively related to Future time perspective. Our findings show Future TP to mediate between mindfulness and the Self-Monitoring sub-

dimension of Self-Control. Research shows that Future TP is highly related to acting with awareness and insight (Wittman et al., 2014). Self-Monitoring involves an effort to direct attention internally and observe behavior with awareness. Furthermore, these actions allow an individual to improve behavior in the future (Mezo, 2009). These features are essential components of self-regulation and our results support these previous findings. With the support of past research, current findings show Future to be the mediating mechanism between the link of higher levels of mindfulness and higher self-control.
Past Positive TP is found to be positively related to the acceptance feature of mindfulness (Wittman, et al. 2014). As stated earlier, mindfulness is similar in construct to Self-Control based on its implementation of self-regulation. Research shows that higher control in self-regulation is exhibited less in individuals who exhibit a negative orientation towards the past (Zebardast et al., 2011). Our results support these findings by showing that Past Positive was found to predict higher overall Self-Control but exhibited no mediating effect between mindfulness and Self-Control.

Research shows that Past Negative TP is negatively related to control ability and pursuit of well-being (Zebardast et al., 2011). Our findings reveal similar results in that Past Negative TP and mindfulness exhibit a negative relationship however, there was no significant relationship between Past Negative TP and Self-Control or mediation effect between mindfulness and Self-Control through Past Negative TP. Considering the future-oriented realm of self-regulation, these findings show that Past Negative may not be a distinct mechanism in this relationship considering its focus on the past.

Research shows that there is a significant negative association between Present Fatalistic TP and control ability (Drake et al., 2011; Zebardast et al., 2011). Considering this is a hopeless attitude with an external locus of control, it was found to predict lower levels of overall Self-Control, and lower levels two of the sub-dimensions which include Self-Reinforcing, and Self-Monitoring. Moreover, Present Fatalistic was found to mediate between mindfulness and Self-Control, including two of its sub-components. Considering individuals with a

Present Fatalistic time frame have little hope and motivation for the future (Bargh, 1990), these results are in line with past studies that display how individuals in this time frame exhibit no control for the future. Following supporting literature, the current study finds Present Fatalism to be the mediating mechanism between higher levels of mindfulness and higher levels of self-control, self-reinforcing, and self-monitoring.

Research shows that there is a significant negative association between Present Hedonistic TP and control ability (Zebardast et al., 2011; Zimbardo, Sword & Sword, 2012). Research shows there is a significant positive relationship between self-regulation and Present Hedonistic TP (Bild, Vansteenkiste & Lens, 2010). Considering this is a stimulation and pleasure seeking time frame, well-being is recognized as a form of pleasure from this point of view (Kahman, Deiner & Schwarz, 1999). Although our findings could not significantly exhibit Present Hedonistic to predict Self-Control or any of its sub-dimensions, there was a non-significant negative relationship. Considering the nature of collectivistic cultures to steer away from focusing on the present moment (Chun, Moos, & Cronkite, 2006), Present Hedonism may not be as prominent of a mechanism as other time perspectives linked between mindfulness and self-control.

5.1.6 Relationship between Balanced Time Perspective and Self-Control

Balanced Time Perspective is often related to well-being, mindfulness (Drake et al., 2008) and lower levels of stress (Papastamatelou, 2015). Individuals with Balanced Time Perspective exhibit higher life satisfaction, set more goals, and explore meaning in their life (Sircova & Mitina, 2008). Balanced Time Perspective is also suggested to be generated through mindfulness (Seema, 2014). Balanced TP has also been observed to be associated with emotional self-regulation, which allows individuals to have better IQ performance and better task engagement (Zajenjowski et al., 2016). Self-Control has been found to be linked to higher IQ scores (Duckworth, Quinn, & Goldman, 2010). Research shows that that Balanced TP exhibits metacognitive abilities that support intelligence

(Hertzog & Robinson, 2005) and assist in emotion regulation and management (Stolarski et al., 2011). Emotion regulation involves an internal analysis of behavior in an effort to adapt to the changing situation. Findings in the current paper support these previous findings by observing the indirect effect mindfulness has on overall Self-Control and two its features (Self-Monitoring and Self-Reinforcing) through Balanced Time Perspective.

These results contribute to Time Perspective Theory by providing further support on the link between the individual time frames and the related behavioral associations. Through this study, we observe how the subjective view of time influences cognitive processes. Most of these findings were in line with the connections established by Zimbardo & Boyd (1999), while some expanded on the relationships, some suggest the need for additional investigation. These findings provide future research and time perspective therapy workshops opportunities to explore further into the nature of applying mindfulness and Time Perspective towards the influence of stress or self-control. These results contribute to research on a theoretical level by illustrating the indirect link between mindfulness and self-control or stress, through time perspective frames.

5.2 Limitations and Suggestions for the Future Studies

The current study is the first one that examines the mediating effect of Time Perspective between mindfulness and stress as well as between mindfulness and self-control. While there are other similar studies that explore a combination of these factors and the variables that surround them, the current study is the first to examine this mediation effect with stress and self-control, with a complete investigation in relation to all of its facets. One major limitation of the study was that the sample size was small. A greater sample would most likely reveal more significant correlations that were not seen within a small sample size such as the one in this study. Another limitation was that these organizational variables were not examined in a professional setting with employed individuals. However, the current sample represent a group of individuals that will soon enter the workforce.

Therefore, the findings in this study are of value to understanding the cognitive processes that need to be considered in the development of innovative techniques to improve the organizational environment. The nature of this study was explorative therefore whether the correlations between correlations between Time Perspective and Stress as well as Self-Control will remain significant in a larger sample need to be examined. Participants was recruited from a University sample, which may represent the University population of a Turkish sample in Istanbul, but may not be an accurate representation of the University population within Turkey overall. One other critical factor to consider is the low reliability of the Self-Evaluating sub-dimension of self-control. This low reliability level challenges the validity of the measures and the findings that are a result of them. One other limitation in the study was that the gender distribution was not equal. The number of female participants in the sample were much greater than the number of male participants. Another factor to consider is the skewed age distribution. These results may not generalize to other age groups. A more balanced distribution of gender and age in the participants may reveal further information in understanding possible differences in mindfulness, time perspective, stress, and self-control.

5.3 Theoretical and Practical Contributions and Implications

The current study is a contribution to the field of research that attempts to expand the knowledge of mindfulness and Time Perspective into the organizational context. While Stress and Self-Control are common factors studied in Organizational Psychology, and mindfulness is becoming integrated over time, no attempt has been made to explore the mediating role of Time Perspective in relation to mindfulness, Stress, and Self-Control. Results suggest the importance of expanding on further research to explore the importance of mindfulness and Time Perspective in relation to the professional setting.

On a conceptual level, this study adds to the past research that links mindfulness and Time Perspective. Findings support literature on mindfulness and Time Perspective, which establishes mindfulness as the foundation for some of the Time Perspectives, such as Balanced Time Perspective. Furthermore, it provides evidence for links between Balanced Time Perspective and Self-Control.

These findings may help shed light on understanding the cognitive processes involved in relation to mindfulness, time perspective, stress, and self-control. Coaching and therapy programs based on time perspective have been found to help individuals with issues pertaining to PTSD and time management. The findings in the current study can benefit the development of these types of mindfulness or time-perspective based therapy programs to cater to new or existing employees. Understanding the relationship between mindfulness and time perspective in relation to stress or self-control can motivate organizations to implement stress-reduction programs and promote self-regulation techniques while taking into account individual differences in time perspective.

These findings are relevant to professional settings and beyond. Stress and Self-Control are organizationally relevant variables and would benefit any institution seeking to improve a number conditions through empirically based findings.

CONCLUSION

The purpose of the present study was to explore the role of Time Perspective between mindfulness and Stress as well as between mindfulness and Self-Control. Time Perspective consists of five frames, including Past Negative, Present Hedonism, Future, Past Positive and Present Fatalistic. Additionally, Balanced Time Perspective is the ideal time frame that consists of a few time frames, allowing the individual to adjust to the situation. The current study hypothesized that Time Perspective would mediate between mindfulness and Stress. It also hypothesized that Time Perspective would mediate between mindfulness and Self-Control. Findings show mindfulness had a positive correlation with Future and Balanced Time Perspective and a negative correlation with Past Negative and Present Fatalistic. Results found no mediation effect for Time Perspective between mindfulness and overall Stress. However, results showed a mediating effect for Present Fatalistic Time Perspective between mindfulness and Self-Control. Present Fatalistic Time Perspective also played a mediating role between mindfulness and the Self-Reinforcing sub-dimension of Self-Control. Future and Present Fatalistic Time Perspective individually played a mediating role between mindfulness and the Self-Monitoring sub-dimension of Self-Control. Balanced Time Perspective played a mediating role between mindfulness and Overall Self-Control.

Findings show that there is a significant relationship between mindfulness, Time Perspective and Self-Control. These findings are essential to explore the area of this research topic even further. These findings are also crucial to apply to the organizational context. Self-Control is an imperative subject that is relevant across settings, but especially in professional settings, these findings can benefit professionals at all levels, from personal behavior, to interpersonal communication, to creating employee development programs.

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APPENDICES

Appendix A

Informed Consent

1. Değerli katılımcı,

Bu çalışma İstanbul Bilgi Üniversitesi Orgutsel Psikoloji Yüksek Lisans Programı öğrencisi Seda Brown tarafından, Yrd. Doç Dr. Umit Akirmak danışmanlığında, yüksek lisans tezi kapsamında yürütülmektedir. Çalışmanın amacı zaman perspektifinin; bilinçli farkındalık, algılanan stres, öz kontrol ve öz liderlik düzeyi arasındaki ilişkinin değerlendirilmesidir. Yaklaşık 5-10 dakika sürecek olan bu çalışmanın ilerleyen sayfalarında çeşitli anketleri doldurmanız istenmektedir.

Çalışmaya katılım gönüllülük ilkesiyle yürütülecektir. Çalışmanın hiçbir bölümünde isminiz veya kimliğinizi ortaya çıkaran herhangi bir soru bulunmamaktadır. Tarafınızdan verilen tüm yanıtlar, araştırma maksadıyla kullanılacak ve araştırmacılar haricinde kimseyle paylaşılmayacaktır. Çalışma süresince kaydedilen verilerin tümü çalışmanın ardından yok edilecektir. Yöneltilecek soruların doğru ya da yanlış cevapları yoktur. Arzu ettiğiniz zaman, hiçbir mazeret sunmanıza gerek olmadan, araştırmadan ayrılabilirsiniz.

Çalışmayla ilgili her türlü soru ve çalışma hakkında daha fazla bilgi almak için, Seda Brown (raciha.brown02@bilgi.edu.tr) ile iletişime geçebilirsiniz.
Katılımınız ve katkılarınız için şimdiden teşekkürler.
Evet, Katilmak istiyorum

Appendix B

Demographics & All Scales

- Yaşınız : _____
- Cinsiyetiniz :

  ☐ Erkek ☐ Kadın
- Eğitim düzeyiniz :

  ☐ Lise ☐ Ön lisans

  ☐ Üniversite ☐Yüksek Lisans

  ☐ Doktora vs.
- Sınıfınız : _____
- Bölümünüz : _____
- Burs durumu :

  ☐ Burslu ☐ Burssuz
- Daha önce herhangi bir iş/staj deneyimi olup olmadığı :

  ☐ Evet ☐ Hayir
- Evet ise, ne kadar sürdü : _____
- 4'lük sistem üzerinden not ortalaması : _____

Zimbardo Time Perspective Inventory (ZTPI) - 56-item

Her maddeyi okuyunuz ve dürüst bir şekilde size ne kadar uygun olduğunu değerlendiriniz. Ölçek üzerinde en uygun kutucuğu işaretleyiniz. Lütfen hiçbir maddeyi atlamayınız, maddelerin tümünü işaretleyiniz.

1: Benim için hiç doğru değil

2: Benim için doğru değil

3: Kararsızım

4: Benim için doğru

5: Benim için çok doğru

- Kişinin, arkadaşlarıyla eğlenmek üzere bir araya gelmesinin, yaşamda en keyifli olaylardan birisi olduğuna inanıyorum.
- Tanıdık çocukluk manzaraları, sesleri ve kokuları bir sürü harika anıyı geri getirir.
- Kader, yaşamımdaki pek çok şeyi belirler.
- Yaşamda neleri farklı yapmalıydım diye sık sık düşünürüm.
- Kararlarım, çoğunlukla etrafımdaki insanlardan ve olaylardan etkilenir.
- Bir günün, o günün sabahında planlanması gerektiğine inanırım.
- Geçmişim hakkında düşünmek beni mutlu eder.
- İçimden geldiği gibi davranırım.
- Eğer işler zamanında hallolmazsa, bunu dert etmem.
- Bir şeyi başarmak istediğim zaman, hedefler koyar ve o hedeflere ulaşmanın yollarını belirlerim.
- Geçmişime baktığımda hatırlanacak iyi şeylerin kötü şeylerden daha fazla olduğunu görüyorum.
- Sevdiğim bir müziği dinlerken zamanın farkına varmam.
- Yarına hazır olması gereken işleri ve gerekli diğer şeyleri

yapmak, bu gece eğlenmekten önce gelir.

- Her şey olacağına varacağı için benim ne yaptığım pek de önemli değildir.
- Eskiden yaşamın nasıl olduğuna ilişkin öykülere bayılırım.
- Eski acı deneyimler kafamda durmadan tekrarlanır durur.
- Yaşamımı olabildiğince dolu dolu ve günü gününe yaşamaya çalışırım.
- Randevularıma geç kalmaktan rahatsız olurum.
- Mümkün olsaydı her günümü sanki son günümmüş gibi yaşardım.
- Geçirdiğim iyi zamanların mutlu anıları hemen aklıma gelir.
- Dostlarım ve yetkililere karşı olan sorumluluklarımı zamanında yerine getiririm.
- Geçmişte, reddedilmeye ve kullanılmaya ilişkin payıma düşeni aldım.
- Kararlarımı, o an kafama estiği gibi alırım.
- Planlamaktansa, her günü olduğu gibi yaşarım.
- Geçmişim, düşünmek istemediğim hoş olmayan hatıralarla dolu.
- Yaşamıma heyecan katmak çok önemlidir.
- Geçmişte, bugün silebilmeyi istediğim hatalar yaptım.
- Yaptığım işten keyif almanın, işin zamanında bitirilmesinden daha önemli olduğunu düşünüyorum.
- Çocukluğuma özlem duyarım.
- Bir karar vermeden önce, artılarla eksileri tartarım.
- Risk almak yaşamımı sıkıcı olmaktan kurtarır.
- Yaşamın nereye gittiğine odaklanmaktansa, yaşam yolculuğunun kendisinin tadını çıkarmak benim için daha önemlidir.
- Olaylar nadiren beklediğim gibi gerçekleşir.

- Gençliğimin tatsız görüntülerini unutmak, benim için çok zordur.
- Eğer amaçlara, sonuçlara ya da ürünlere odaklanmak zorunda kalırsam, yaptığım işin sürecinden ve akışından keyif alamam.
- Bugünümden keyif alırken bile, kendimi benzer geçmiş deneyimlerimle karşılaştırmalar yaparken bulurum.
- Her şey o kadar çok değişiyor ki, gelecek için gerçekten bir plan yapılamaz.
- Yaşamım, benim dışımdaki şeyler tarafından kontrol ediliyor.
- Nasıl olsa elimden bir şey gelmeyeceği için, gelecek hakkında kaygılanmanın alemi yok.
- İstikrarlı şekilde ilerleyerek, işleri zamanında bitiririm.
- Aile üyeleri eskiden yaşamın nasıl olduğundan bahsettiklerinde sıkılırım.
- Yaşamıma heyecan katmak için risk alırım.
- Yapılacak işler listesi hazırlarım.
- Aklımın sesinden çok, kalbimin sesini dinlerim.
- Yapılması gereken işler varsa, beni yolumdan ayıracak şeylere karşı koyabilirim.
- Anın heyecanıyla sürüklenir giderim.
- Yaşam bugün çok karmaşık; geçmişin basit yaşamını tercih ederim.
- Davranışlarını tahmin edebildiğim arkadaşlardan çok, anlık ve içten geldiği gibi davranan arkadaşları tercih ederim.
- Aile geleneklerini ve düzenli olarak tekrarlanan aile toplantılarını severim.
- Geçmişte başıma gelen kötü şeyler hakkında düşünürüm.
- Eğer ilerlememe yardım edecekse, zor ve ilgimi çekmeyen işleri yapmaya devam ederim.

- Kazandığımı, yarının güvenliği için saklamaktansa bugünün keyfi için harcamak iyidir.
- Genellikle şans, sıkı çalışmaktan daha çok kazandırır.
- Yaşamımda hep kaçırdığım güzellikleri düşünürüm.
- Yakın ilişkilerimin tutkulu olmasını isterim.
- Her zaman çalışmalarımı tamamlamaya yetecek zamanım olacaktır.

Perceived Stress Scale (PSS-14) // Algılanan Stres Ölçeğinin

Aşağıdaki sorular son bir ay içindeki düşünceleriniz ve duygularınızla ilgilidir. Her bir soruda sizden bu düşünceyi ya da duyguyu ne sıklıkta yaşadığınızı belirtmeniz istenmektedir. Bazı sorular birbirine benzer gibi görünse de aralarında farklılıklar vardır ve her soruyu ayrı bir soru olarak değerlendirmeniz gerekmektedir. Soruları yanıtlarken son bir ay içinde ne sıklıkta bu şekilde düşündüğünüzü ya da hissettiğinizi hesaplamaya çalışmak yerine soruyu okuduktan sonra seçenekler arasında en uygun gördüğünüz tahmini işaretlemeniz daha uygun olacaktır.

1: Hiçbir Zaman

2: Neredeyse Hiçbir Zaman

3: Bazen

4: Oldukça Sık

5: Çok Sık

- Geçen ay, beklenmedik bir şeylerin olması nedeniyle ne sıklıkta rahatsızlık duydunuz?
- Geçen ay, hayatınızdaki önemli şeyleri kontrol edemediğinizi ne sıklıkta hissettiniz?
- Geçen ay, kendinizi ne sıklıkta sinirli ve stresli hissettiniz?
- Geçen ay, ne sıklıkta gündelik zorlukların üstesinden başarıyla geldiniz?
- Geçen ay, hayatınızda ortaya çıkan önemli değişikliklerle etkili bir şekilde başa çıktığınızı ne sıklıkta hissettiniz?
- Geçen ay, kişisel sorunlarınızı ele alma yeteneğinize ne sıklıkta güven duydunuz?
- Geçen ay, her şeyin yolunda gittiğini ne sıklıkta hissettiniz?
- Geçen ay, ne sıklıkta yapmanız gereken şeylerle başa çıkamadığınızı fark ettiniz?
- Geçen ay, hayatınızdaki zorlukları ne sıklıkta kontrol

edebildiniz?

- Geçen ay, ne sıklıkta her şeyin üstesinden geldiğinizi hissettiniz?
- Geçen ay, ne sıklıkta kontrolünüz dışında gelişen olaylar yüzünden öfkelendiniz?
- Geçen ay, kendinizi ne sıklıkta başarmak zorunda olduğunuz şeyleri düşünürken buldunuz?
- Geçen ay, ne sıklıkta zamanınızı nasıl kullanacağınızı kontrol edebildiniz?
- Geçen ay, ne sıklıkta problemlerin üstesinden gelemeyeceğiniz kadar biriktiğini hissettiniz?

Mindfulness Attention and Awareness Scale - Bilinçli Farkındalık Ölçeği (BİFÖ)

Bu ölçek kişilerin bilinçli farkındalık düzeyini belirlemek amacıyla geliştirilmiştir. Lütfen aşağıdaki maddeleri okuyun ve size uygunluk derecesine göre cevap seçeneklerinden birini işaretleyin.

1: Hemen hemen her zaman

2: Çoğu zaman

3: Bazen

4: Nadiren

5: Oldukça seyrek

6: Hemen hemen hiçbir zaman

1. Belli bir süre farkında olmadan bazı duyguları yaşayabilirim.
2. Eşyaları özensizlik, dikkat etmeme veya başka bir şeyleri düşündüğüm için kırarım veya dökerim.
3. Şu anda olana odaklanmakta zorlanırım.
4. Gideceğim yere yolda olup bitenlere dikkat etmeksizin hızlıca yürüyerek gitmeyi tercih ederim.
5. Fiziksel gerginlik ya da rahatsızlık içeren duyguları, gerçekten dikkatimi çekene kadar fark etmeme eğilimim vardır.
6. Bir kişinin ismini, bana söylendikten hemen sonra unuturum.

7. Yaptığım şeyin farkında olmaksızın otomatiğe bağlanmış gibi yapıyorum.
8. Aktiviteleri gerçekte ne olduklarına dikkat etmeden acele ile yerine getiririm.
9. Başarmak istediğim hedeflere öyle çok odaklanırım ki o hedeflere ulaşmak için şu an ne yapıyor olduğumun farkında olmam.
10. İşleri veya görevleri şu an ne yapıyor olduğumun farkında olmaksızın otomatik olarak yaparım.
11. Kendimi bir kulağımla birini dinlerken aynı zamanda başka bir şeyi de yaparken bulurum.
12. Gideceğim yerlere farkında olmadan gidiyor, sonra da oraya neden gittiğime şaşırıyorum.
13. Kendimi gelecek veya geçmişle meşgul bulurum.
14. Kendimi yaptığım işlere dikkatimi vermemiş bulurum.
15. Ne yediğimin farkında olmaksızın atıştırıyorum.

Self-Control and Self-Management Scale (SCMS)

Lütfen aşağıdaki ifadelerin her birini okuyunuz ve her bir ifadenin sizi ne kadar iyi betimlediğini aşağıdaki ölçeği kullanarak derecelendiriniz:

5: Beni tamamıyla tanımlıyor.
4: Beni büyük ölçüde tanımlıyor.
3: Beni biraz tanımlıyor.
2: Beni çoğunlukla tanımlıyor.
1: Beni hiç tanımlamıyor.

- Bir şey üzerinde çalıştığım zaman, tüm dikkatimi ona veririm.
- Yapmam gereken görevlere, onları sevmesem de odalanırım.
- Bir amaç uğruna çalışırken, yaptığım şeyin bilincinde olurum.
- Bir hedef doğrultusunda çalışırken, ilerleyişimi sürekli takip ederim.

- Zor bir şey üzerinde çalışırken, düşüncelerim üzerinde yoğunlaşırım.
- Bir amaç doğrultusunda çalışırken, hangi yolu takip edebileceğimi bilirim.
- Kendim için önemli hedefler belirlediğimde, o hedefleri genellikle başaramam.
- Hayatımda karşılaştığım çoğu sorun için net planlar yapma yeteneğine sahip olduğumu düşünüyorum.
- Başardığım hedefler benim için çok şey ifade etmez.
- Plan yapmanın faydasız olduğunu düşünüyorum.
- Kendim için oluşturduğum standartlar belirsizdir ve bir görevi nasıl yapmam gerektiği konusunda karar vermem zor olur.
- Başarı sağladığımda kendimi takdir ederim.
- Daha sonra tadını çıkarmak için plan yaparak zor işlere girişirim.
- Başkaları beni takdir etmese de, ben kendimi sessizce takdir ederim.
- Bir şeyi doğru yaptığımda, bunun tadını çıkarırım.
- Ilerleme sağladığım zaman, kendimi ödüllendiririm.

ETİK KURUL DEĞERLENDİRME SONUCU/RESULT OF EVALUATION BY THE ETHICS COMMITTEE

(Bu bölüm İstanbul Bilgi Üniversitesi İnsan Araştırmaları Etik Kurul tarafından doldurulacaktır /This section to be completed by the Committee on Ethics in research on Humans)

Başvuru Sahibi / Applicant: Seda Brown

Proje Başlığı / Project Title: Dispositional Mindfulness and Servant Leadership: Exploring the Mechanisms

Proje No. / Project Number: 2016-20024-045

1.	Herhangi bir değişikliğe gerek yoktur / There is no need for revision	XX
2.	Ret/ Application Rejected Reddin gerekçesi / Reason for Rejection	

Değerlendirme Tarihi / Date of Evaluation: 4 Ekim 2016

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