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GROWTH MINDSET: EXPLORATION OF CAREER DEVELOPMENT, EMPLOYEE ENGAGEMENT, AND DISPARITY AMONG WORKING PROFESSIONALS

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GROWTH MINDSET: EXPLORATION OF CAREER DEVELOPMENT, EMPLOYEE
ENGAGEMENT, AND DISPARITY AMONG WORKING PROFESSIONALS

by

Dillon P. Harper

A Dissertation
Submitted to the Graduate School,
the College of Education and Human Sciences
and the School of Psychology
at The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

Approved by:

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ABSTRACT

A large body of literature has explored the beneficial impact of adopting a growth mindset and its relationship with academic performance. While the literature has provided many valuable findings as it pertains to academic settings, there is a gap in understanding growth mindset's influence in the workplace as well as understanding if growth mindset's effect is different for individuals who come from marginalized communities. This study aimed to close the gap by investigating if growth mindset is a predictor of higher work engagement in working professionals. Findings indicated that growth mindset is not a predictor of work engagement among working professionals. Career optimism and career adaptability also did not mediate the relationship between growth mindset and work engagement. Racial identity was also not found to moderate the effect growth mindset has on work engagement. However, results did show that growth mindset predicted career optimism and career adaptability predicted work engagement among working professionals. Implications and future directions are discussed.

Keywords: Growth mindset, Work engagement, Career optimism, Career adaptability

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DEDICATION

I would like to dedicate this work to my wife who has been with me through the ups and downs of being a doctoral student. She is the sunshine in my life. I would also like to dedicate this work to my mother who has often had more faith in me than I have had in myself. She has always believed in my dreams and has never doubted my ability to succeed. Griffin and Evelyn, the miracles of my life who remind me that the greatest calling in life is fatherhood. Lastly, my faith in God which has taught me that “I can do all things through Christ which strengtheneth me.”

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LIST OF ABBREVIATIONS

<i>BIPOC</i>	Black, Indigenous, and People of Color
<i>CA</i>	Career Adaptability
<i>CAAS</i>	Career Adapt-Abilities Scale
<i>CFI</i>	Career Futures Inventory
<i>CO</i>	Career Optimism
<i>GM</i>	Growth Mindset
<i>GMS</i>	Growth Mindset Scale
<i>UWES</i>	Utrecht Work Engagement Scale
<i>WE</i>	Work Engagement

CHAPTER I – LITERATURE REVIEW

Growth Mindset: Exploration of career development, and employee engagement, and disparity among working professionals

Growth mindset (GM) is most simplistically understood as viewing challenges, failures, and difficulties as opportunities for continued growth and development (Dweck, 2006). It is also characterized by the assumption that intelligence is malleable and can be increased through persistent effort and commitment (Dweck, 2006). The opposite of GM is a fixed mindset. An individual with a fixed mindset can be characterized as someone who becomes defeated and hindered by failures, challenges and roadblocks; fixed mindsets deny that intelligence is malleable and can be changed (Dweck et., 1995; Dweck, 2006).

There has been a growing body of literature that has shown endorsing a GM has particular benefits in academic settings (Dweck, 2006; Yeager et al., 2019). As such, the primary dependent variables that have been used in mindset research are usually grade point averages, test scores, and final course grades (Dweck, 2006). Multiple studies have indicated that when students adopt a GM, they experience more success in the classroom (Yeager et al., 2019). These research findings have resulted in national initiatives in different countries that have attempted to encourage students to endorse a GM (Yeager et al., 2019; Yeager & Dweck, 2012).

While much of the literature has offered support for GM predicting academic performance, and as such has utilized primarily student samples, research investigating the relationship and influence GM has in the workplace is beginning to emerge (Dweck, 2006; Caniels et al., 2018). Researchers have found that individuals who endorse a GM in

the workplace are more likely to be engaged and have success in their occupations (Caniels et al., 2018; Keating et al., 2015). To extend the literature on GM in adult samples, this project intends to examine growth mindset in the workplace, focusing on the relationship between growth mindset and workplace engagement, career optimism, and career adaptability.

Workplace engagement is primarily characterized by the degree of vigor, dedication, and absorption an individual has as it relates to their occupation (Seppälä et al., 2009). Workplace engagement is important due to its role in promoting successful performance and worker development (Seppälä et al., 2009). Relatedly, career optimism is defined by how optimistic an individual is about their future career development and growth, career optimism is important to research due to the role it plays in gauging an individual's outlook for future career opportunities and directions (Rottinghaus et al., 2005). Career adaptability is the ability of an individual to adapt to workplace challenges and setbacks (Savickas & Porfeli, 2012). A lack of career adaptability has shown to be associated with increased difficulty with workplace challenges and setbacks (Savickas & Porfeli, 2012). In sum, literature has indicated that the more an individual is engaged in their occupation, the more fulfilled and satisfied they become in the workplace (Seppälä et al., 2009). Additionally, when an individual has higher levels of career optimism and career adaptability, they are more likely to be optimistic about their future career development and are more likely to adapt to workplace challenges and obstacles (Safavi et al., 2018). The literature has also demonstrated that GM may act as a predictor for these career variables and that these variables contribute to favorable career outcomes

(Caneils et al., 2018; Keating et al., 2015; Safavi et al., 2018; Zeng et al., 2019). Yet, further clarification on the relationships between these variables is needed.

Additionally, increased demographic diversity in studies on GM is needed. The majority of studies investigating GM recruit participants who are adolescents (Claro et al., 2016). This project aims to contribute to the literature by diversifying the sample population to include working adults. Recruiting participants who are working adults will offer valuable insight into the theoretical applicability of GM with an older population. Further, an important factor that has not been addressed in the literature is determining whether GM relates to the same outcomes across racial groups. Studies have suggested that when ethnic minority individuals endorse a GM, they still tend to underperform when compared to their peers who also endorse a GM (Fink et al., 2018; Harper et al., 2022). These findings indicated that GM's effect on outcomes may not be as strong across different racial groups. Investigating racial differences as it relates to growth mindset can help researchers understand how the theory of growth mindset may need to be adapted or clarified when it is being introduced as a broad construct that can improve work or academic outcomes. Moreover, potential racial differences in GM may demonstrate that growth mindset, despite its benefits, is still vulnerable to systemic structures of oppression for ethnic minorities.

Thus, the aim of the current study is to offer empirical evidence that GM relates to workplace engagement, career optimism, and career adaptability among working professionals to expand the developmental understanding of GM theory. Additionally, this project aims to understand whether GM's effect may be moderated by race among working professionals. By understanding the effect GM has across racial groups, it will

help close the gap in determining whether the effect of GM is moderated by race; something that has been neglected in the mindset literature. In the proceeding sections, the theory behind growth mindset, career development, and work engagement will be discussed. Further, an exploration into the literature on growth mindset as it relates to ethnic minorities will be reviewed.

Growth Mindset

The theory behind GM was initially proposed by Carol Dweck, a psychologist and faculty member at Stanford university (Dweck, 2006; Dweck et al, 1995). However, she constructed her theory using Ellen Leggett's (1988) theory of implicit theories of intelligence which proposes that individuals unknowingly view their intelligence through "implicit" cognitive mechanisms that can influence the way they interact in learning environments (Dweck 1995). Dr. Dweck added to the theory by proposing that individuals have two distinct implicit theories of intelligence that can help or hinder the learning process (i.e., fixed, incremental; Dweck, 2006).

Her theory suggested that individuals who endorse incremental views of intelligence are characterized as people who have the assumption that they can gain new knowledge and can expand the breadth of their understanding despite prior challenges or failures (Diener & Dweck, 1978; Dweck et al.,1995; Dweck & Leggett, 1988). Additionally, an incremental view of intelligence is understood with the assumption that intelligence is malleable (Dweck, 2006; Yeager & Dweck, 2012). What she proposed as an incremental view of intelligence was later referred to as GM in her later research. In her studies, she began to observe that students were more successful particularly when

they were able to adhere to viewing their challenging curriculum as an opportunity for development opposed to an indication of ineptitude (Diener & Dweck, 1978).

Contrary to the incremental view of intelligence, is what Dr. Dweck referred to as an entity view of intelligence (Dweck et al., 1995). The entity view is characterized by the assumption that the ability to learn novel complicated content is fixed and is not malleable (Dweck et al., 1995). An individual who is prone to an entity view of intelligence likely succumbs to their individual failure by neglecting the further pursuit of the task they failed. Dweck's research found that when participants endorsed a fixed mindset, there was a sense of learned helplessness that kept them from succeeding in academic tasks (Dweck et al., 1995; Yeager et al., 2019).

Moreover, the concept of GM can be applied to different contexts in one's life, such as overall intelligence, academics, and work. For instance, within the context of academic performance, the main findings show that endorsing GM has been related to higher academic success (Dweck 2006). Utilizing GM in an academic context consists of investing more time and commitment to learning challenging material that an individual finds difficult and intimidating (Dweck et al., 1995). It encourages an individual to pivot and alter their view of failure and embracing it as an opportunity for growth. The literature has suggested that GM improves the academic outcomes of students in different courses of study that have included science, reading, and mathematics classes among children and adolescents (Yeager et al., 2019). The interest in GM in academic settings has become mainstream given these findings and teachers and administrators have attempted to integrate interventions into their academic agendas (Yeager et al., 2019).

Within the context of work, GM has been examined on the organizational level and an individual level. The main findings have indicated that GM improves engagement, which in turn, increases positive work outcomes (Caniels et al., 2018). More specifically, Dweck (2006) has found that in organizations where a culture of GM is fostered, professionals are more likely to trust their colleagues, have more commitment to the organization, and be more comfortable taking risks that result in newer innovation. GM relates to individual outcomes in the workplace as evidenced by employees with higher GM taking more initiative to take on challenging projects (Dweck, 2006).

Researchers have been advocating for more intentional research that attempts to connect GM to the workplace. Rattan and Ozgumus (2019) suggested that GM's influence should be explored as it relates to how individuals with GM react to unemployment, being laid off, promotion, and facing economic uncertainty. They also propose that additional research should be focused on how GM interacts across levels in the workplace (individual, dyad, team, and organizational). Overall, there is a call to better understand the role GM plays in organizational and occupational structures (Rattan & Ozgumus, 2019).

In sum, Dr. Dweck's theoretical development of GM, beginning in the early 1980's, has been supported by empirical evidence that there are malleable aspects to intelligence. Further, her findings have shown that success in different settings can be achieved by viewing setbacks, failures, and challenges as opportunities for further development and mastery (Dweck, 2006; Yeager et al., 2019; Yeager & Dweck 2020). While Dweck clarified a GM in every situation was not likely (Dweck et al., 2016; Yeager & Dweck, 2020) it is possible to be more intentional about developing a GM in

different areas of one's life (Dweck et al., 2016; Yeager & Dweck 2020). While GM has been largely studied in academic settings, there is much less empirical research on the ramifications of GM in the workplace. It is probable to assume that the benefits of adopting a GM can bleed into the lives of working professionals just as it has with students. A GM may aid employees in advancement, promotion, and better performance. Within the context of work, understanding how GM can influence work engagement can be worthwhile due to the implications it can have on helping working professionals become more engaged and committed to their careers.

Workplace Engagement

Workplace engagement (WE) does not have one universally agreed upon definition. However, much of the literature has defined WE within similar conceptual frameworks that consist of being committed, driven, vigorous, dedicated, absorbed, and emotionally, cognitively, and physically present in one's occupational tasks and workplace organization (Kahn, 1990; Macey & Schneider 2008; Markos & Sridevi 2010; Schaufeli, 2004; Seppälä et al., 2009). Conversely, when working professionals become disengaged, their work outcomes begin to suffer and their development is hindered (Markos & Sridevi, 2010). Therefore, WE has been considered by many researchers as a key to helping working professionals improve their performance (Markos & Sridevi, 2010). Thus, improving WE has been a topic of interest for organizational and vocational researchers as well as organizations.

Although researchers have neglected to reach a consensus on a universally or singularly agreed upon definition of what characterizes WE, a primary researcher that helped develop a theoretical understanding of WE was Dr. William Kahn. In one of the

first published works on employee engagement and disengagement, Kahn (1990) expanded and spurred research into WE theories, assumptions, and research. The primary aim of his work was to understand what characterizes WE, how can greater WE be achieved, and what are the primary deterrents that prevent WE from developing (Kahn, 1990). He posited that individuals in work environments bring varying degrees of themselves into their work that encompass physical, cognitive, and emotional areas (Kahn, 1990). He theorized that WE had three dimensions that included physical engagement, cognitive engagement, and emotional engagement (Kahn, 1990). Physical engagement consists of being physically present in the work environment. Being cognitively present encompasses the extent to which an employee deploys the best of their cognitive capabilities in their work-related tasks. Emotional engagement was characterized as the degree an employee was able to commit themselves to emotional connections within the work environment (Kahn 1990; Kahn, 1992).

Outcomes of Work Engagement

Research on WE has become more prevalent due to the role and impact WE has shown to have on individuals and the organization to which they belong (Markos & Sridevi, 2010). The presence of WE, or lack thereof, has shown to play a strong role in the outcomes of working professionals, thus suggesting the importance of scholarship on WE. When WE is present, professionals tend to stay with their organization longer and they perform better in their occupational roles (Kahn, 1990; Markos & Sridevi, 2010; Zeng et al., 2019). Conversely, Dr. Kahn's work demonstrated that when working professionals were disengaged, or lacking strong workplace engagement, it affected their performance and dampened their development and opportunities for future growth (Kahn,

1990; Kahn, 1992). In sum, WE has been identified in the research for the past several decades as an important construct that can influence the development and success of professionals in the workplace. Work engagement has been of equal importance to employers as it is to employees primarily due to the great impact disengagement can have on the performance of a company (Markos & Sridevi, 2010).

Investigating GM as an antecedent of WE has been minimally explored. This project aims to close that gap and offer new insight into whether WE is related to GM (Caniels et al., 2018; Keating & Heslin, 2015). Research suggests that GM may be a potential antecedent of WE (Han & Stieha, 2020; Keating and Heslin, 2015; Risley, 2020) that may act as a key component for maintaining sustained engagement in one's occupation. By linking GM as an antecedent to WE, it can help organizations and professionals increase the likelihood for better outcomes in their work and future opportunities for development.

Growth Mindset as a Predictor of Workplace Engagement

Recently, there has been an increasing body of literature that has explored how adopting characteristics consistent with a GM have shown to improve engagement in working professionals. Keating and Heslin (2015) proposed that encouraging professionals to adopt a GM in their work environment and work-related tasks would ultimately lead to better employee engagement. They suggested that the way professionals perceive and interpret setbacks has the potential to influence WE. Their work theorized that GM acted as an antecedent to increase WE. Additionally, a literature review, that included 12 articles concerning employee development, indicated that the mindset professionals endorse significantly influences their level of engagement in the

workplace, particularly among supervisors (Han & Stieha, 2020). A larger scale study found that among 472 teachers throughout 10 school systems in the Chinese educational system, having a GM predicted better engagement with students (Zeng et al., 2019). A study in the Netherlands using 259 participants recruited from a tech organization, found that GM strengthened personality-engagement, or the ability to be more receptive to different leadership styles (Caniels et al., 2018).

While the existing body of literature is small, there is promising evidence that indicates GM may be an antecedent to increasing engagement among working professionals. The findings from the literature that have attempted to understand GM and WE have indicated that when professionals endorse a GM in their work, they are more likely to experience higher levels of engagement which can ultimately lead to better outcomes for professionals and organizations (Caniels et al., 2018; Heslin, 2010), yet the mechanisms for understanding how GM increases engagement in one's work is unknown. However, literature has indicated that career optimism and career adaptability may be mediators in the relationship between GM and work engagement (Coetzee et al., 2016; Garcia et al., 2016; Joo & Lee, 2017; Karatepe & Karadas, 2015). This would suggest that the relationship between GM and work engagement can be partially explained by increases in career optimism and career adaptability as a result of adapting a GM.

Career Optimism and Career Adaptability as Mediators of the relationship between

Growth Mindset and Work Engagement

There is a gap in the literature on fully understanding how GM relates work engagement. The literature points to career adaptability and career optimism being identified and linked as an antecedent/predictor of work engagement (Coetzee et al.,

2016; Garcia et al., 2016; Joo & Lee, 2017; Karatepe & Karadas, 2015 ; McIlveen & Perera, 2016; Salmela-Aro et al., 2009; Tladinyane et al., 2016; Xanthopoulou et al., 2009; Yang et al., 2019). Therefore, career optimism and career adaptability may be the mechanism that explains the relationship between GM and work engagement.

Conceptually, GM, career adaptability, and career optimism share many similarities. All three constructs share characteristics that consist of overcoming challenges and reframing the way obstacles are viewed (Dweck, 2006; Rottinghaus et al., 2005; Savickas, 2013). Although growth mindset, career adaptability, and career optimism derive from different theories, they share conceptual similarities that have yet to be extensively explored in the research. Making meaning of failure and being able to adapt to setbacks while maintaining an optimistic outlook for the future are all familiar facets identified in the career development and mindset literature (Burnette et al., 2020). Thus, having a GM more broadly may foster development of career optimism and career adaptability, focused on one's worklife, that leads to increased work engagement.

Career Optimism

Career optimism is a career development variable that can be defined as the ability one has to be optimistic and hopeful regarding their future career growth and development (Eva et al., 2020; Rottinghaus et al., 2005). Individuals who possess career optimism view their progress, development, and future career with a brighter outlook opposed to someone who lacks career optimism (Odero et al., 2020). The theory behind career optimism was originally introduced during the construction of the Career Futures Inventory; a measure that is used to assess positive career planning attitudes (Rottinghaus et al., 2005). The theoretical underpinnings of career optimism were built from the theory

of dispositional optimism that asserts good things will happen across life domains (Scheier & Carver, 1985; Rottinghaus et al., 2005). It can be characterized as an overall attitude of optimistic assumptions for the future. In an attempt to expand the theory of dispositional optimism into the career domain, the construct of career optimism was created.

Possessing career optimism relates to a number of important outcomes. In a review of the literature on career optimism, Eva et al. (2020) found that a professional who has career optimism is more likely to view career setbacks and challenges as temporary. When career optimism is lacking, there is a lack of motivation and a hopeless outlook for future career growth and success (Eva et al., 2020). Further, additional research has found that a lack of career optimism has also been associated with a lack of career and life satisfaction, engagement, and career decisiveness (Chatterjee et al., 2015; Eva et al., 2020; McIlveen et al., 2016).

Growth Mindset and Career Optimism

Conceptually, GM and career optimism share similar tenants that center on looking optimistically towards the future as an opportunity for continued growth and development (Dweck, 2006; Rottinghaus et al., 2005), yet this relationship has seldom been explored. The literature that does exist indicates that career optimism and growth mindset are related (Hogin & Larkin-Wong, 2013). Linking career optimism to GM will offer additional insight that can provide evidence that when working professionals adopt a GM they are also more likely to view their future career development and growth through an optimistic lens (Dweck, 2006; Eva et al., 2020; Hogin & Larkin-Wong, 2013),

which in turn, increases WE. Furthermore, examination of GM and career optimism can provide clarity on the conceptualization of both constructs.

Career Optimism as Predicting Work Engagement

There is additional evidence that has demonstrated career optimism may be a predictor for work engagement in several occupations. McIlveen and Perera (2015) discovered that public educators' work engagement was directly related to the level of career optimism they endorsed. Their findings also suggested that career optimism influenced employee retention which offered support for career optimism positively influencing work engagement, but also positively increasing retention efforts (McIlveen & Perera, 2015). Similarly, career optimism was shown to significantly influence the level of engagement among nurses in hospital settings (Garcia et al., 2016). Salmela-Aro et al. (2009) found that among early career professionals, higher optimism predicted increased levels of engagement, low levels of burnout, and reduced task avoidance in their occupational roles. Karatepe and Karadas (2015) concluded that career optimism was identified as the best indicator of engagement, resilience, and self-efficacy.

Career Adaptability

Similar to career optimism, there is evidence to suggest that career adaptability may also act as a mechanism by which increased GM leads to greater WE (Coetzee et al., 2016; Tladinyane et al., 2016; Xanthopoulou et al., 2009; Yang et al., 2019). The initial theoretical conceptualization of career adaptability began in 1981 with Donald Super and Edward Knasel's publication on career development that defined the term as one's readiness and capability to cope with changing work environments and challenges (Johnston, 2018; Super & Knasel, 1981). Further development of the construct occurred

when Mark Savickas (1997) proposed that career adaptability could be used as a method to apply Super's life-space theory which ultimately led Savickas to develop the Career Construction Theory (CCT; Savickas & Porfelli, 2012; Savickas, 2013). He developed CCT as an attempt to understand and explain the interpersonal and behavioral processes that influence one's vocational interest, behavior, and the ways in which individuals make meaning from their profession. A central tenant of the theory proposes that life themes contribute to the creation of a personal narrative leading to career selection and development (Savickas & Porfelli, 2012; Savickas, 2013).

CCT posits that there are four components that comprise the construct of career adaptability referred to as "adapt-abilities" which are control, concern, curiosity, and confidence (Savickas & Porfelli, 2012; Savickas, 2013). Concern is characterized by the capability one has to foresee and prepare for future vocational events. Control can be defined as the commitment one has to take control of their vocational situation and future. Curiosity is defined as the interest in different roles and identities within one's profession. Confidence is characterized as the ability one has to execute and achieve their desired career goals (Savickas, 2013). Ultimately, as CCT contends, when an individual has an adequate amount of career adaptability, they are more likely to adjust to workplace challenges, setbacks, and barriers compared to an individual who is lacking in these areas.

Research has identified that career adaptability is an important construct for professionals to foster in their occupational roles. Zacher (2015) found that career adaptability predicted daily task and career performance, as well as career and job satisfaction. Additionally, Chan and Mai (2015) found that career adaptability was

correlated with higher career satisfaction and lower employee turnover in organizations, those who lacked career adaptability were less likely to be satisfied and more likely to leave the company. Koen et al. (2010) discovered that career adaptability also influenced how individuals sought job opportunities during periods of unemployment. They found that individuals who had higher levels of career adaptability were more likely to receive more employment opportunities due to the way they approached their job search. Individuals with lower levels of career adaptability were less likely to search for as many jobs and experienced higher turnover rates (Koen et al., 2010). Lastly, Ohme and Zacher (2015) discovered that career adaptability was positively associated with job performance ratings. Overall, the literature has indicated that career adaptability can impact satisfaction, retention, employability, and job performance in the workplace (Chan & Mai 2015; Koen et al., 2010; Ohme & Zacher, 2015; Zacher, 2015).

Growth Mindset and Career Adaptability

Seibert et al. (2016) identified the similarities between growth mindset and career adaptability. He referenced that they are conceptually similar due to both constructs being characterized by their focus on being able to adapt, overcome, and grow from challenging setbacks in the workplace. His research demonstrated that a crucial step in acquiring a greater level of career adaptability and career resilience came down to adopting a growth mindset (Seibert et al., 2016). Additionally, Nauman et al. (2021) found that adopting a growth mindset aided employees amidst the COVID-19 pandemic in adapting to unexpected challenges and setbacks in the workplace. While the literature on GM and career adaptability is limited, evidence suggests that GM plays a role in the development of career adaptability to some extent (Nauman et al., 2021; Seibert et al., 2016).

Furthermore, this would indicate that it is plausible to assume career adaptability may also play a role in the connection between GM and WE.

Career Adaptability as Predicting Work Engagement

Like career optimism, the literature points to career adaptability as being an antecedent of work engagement. As it relates to career adaptability, Xanthopoulou et al. (2009) discovered that when working professionals had access to better resources, they became more adaptable in their occupational roles. In addition to these findings, they found that increased adaptability resulted in increased engagement. Coetzee et al. (2016) discovered similar findings in a study that demonstrated among early career professionals in the media industry, career adaptability acted as a significant predictor of increased work engagement. Among Chinese working professionals, Yang et al. (2019) found that career adaptability mediated the relationship between employee wellbeing and employee engagement. Tladinyane et al. (2016) discovered that among South African professionals working in the insurance industry, career adaptability was responsible for higher levels of work engagement. Thus, the literature appears to suggest that career adaptability has been identified as a significant predictor of work engagement (Coetzee et al., 2016; Tladinyane et al., 2016; Xanthopoulou et al., 2009; Yang et al., 2019).

In sum, the presence of GM, career adaptability, and career optimism can result in better outcomes in different areas of life (i.e., work and school) (Dweck, 2006; Rottinghaus et al., 2005; Safavi & Karatepe, 2018). Being able to connect these variables with greater empirical clarity within the scope of career development would first, provide a broader understanding of how GM applies to career development, and second, results

could offer evidence to suggest that adopting a GM positively influences career development among working professionals.

It is understood, and agreed upon, that one of the foremost issues facing individuals and organizations is a lack of engagement (Markos & Sridevi, 2010). There is a need to explore contributing factors that influence the presence or absence of engagement. There is also a need to understand how working professionals can become more optimistic and adaptive in their careers. In an age of continued technological modernization, the workplace can become somewhat boundaryless as it relates to home life and work life. Given that career optimism and career adaptability have shown to be essential for career success, it is imperative to investigate how GM may be an antecedent to the development of these career variables to aid in identification of potential career interventions (Markos & Sridevi; Shimazu et al., 2010; Simpson, 2009).

This study proposes that GM can increase work engagement, via increased career optimism and career adaptability (Olender et al., 2020; Safavi & Karatepe & Kardas, 2015). The assumption is that GM increases work engagement because GM also increases career optimism and career adaptability, which in turn increases work engagement. Providing evidence for GM as an antecedent for career adaptability and career optimism would show that working professionals who adopt a GM are also more likely to be optimistic about their career-related future and also are more likely to adapt to workplace challenges in a more adaptive manner than their peers. In sum, when working professionals have greater levels of career optimism and career adaptability, they experience greater occupational outcomes on measures of performance (Haibo et al., 2018; Mappamiring & Kusuma, 2021; Safavi & Karatepe, 2018). The presence of career

adaptability and career optimism can greatly influence the success of working professionals. Thus, identifying antecedents of career adaptability and career optimism should be more closely investigated in the literature; a need this project will attempt to address (Markos & Sridevi, 2010; Shimazu et al., 2010; Simpson, 2009).

Racial Disparities and Growth Mindset

Overall, the literature offers evidence to suggest that racial differences in GM have been observed in studies, while in other studies, no differences have been observed (Carr et al., 2012; Dweck, 2006; Harper, 2022). Proponents of GM generally hold the assumption that when individuals endorse a GM, it has relatively universal effects across populations or groups, and anyone can benefit from endorsing GM (Dweck, 2006; Yeager et al., 2012; Yeager & Dweck, 2020). For example, Dweck (2014) found that among a mixed-race GM group, African American and White students did not have mathematics scores that varied significantly, and no significant racial differences in GM were observed. While the research on racial disparities and GM is sparse, researchers have found that implementing a GM intervention among minority students helped reduce academic disparities and increased success (Broda et al., 2018).

Yet, other research hints that the benefits of GM among different racial groups is mixed. Destin et al. (2019) found that there were differences between different races and ethnicities regarding those who endorsed and did not endorse GM. Their results indicated that minority groups were less likely to endorse GM than their Caucasian peers. Additionally, Harper (2022) found that among first-generation college students, African American students were far less likely to endorse a GM compared to their White peers.

Potential Causes for Racial Differences in GM

Critics of GM argue that the reasoning behind why differences may exist for minorities and non-minority groups as it relates to GM primarily centers on systemic barriers. They posit that even when a GM is endorsed among these groups, effects are weaker when compared to their privileged peers (Spicer, 2018). Critics of GM propose that encouraging underprivileged populations to endorse a GM can perpetuate systemic racism by neglecting to acknowledge that despite their best effort, environmental and systemic barriers can hold these groups back regardless of how much they attempt to adopt a GM (Spicer, 2018). These barriers may consist of harmful stereotypes, lack of representation, and a lack of financial resources that non-minority groups do not regularly encounter (Hoyt & Burnette, 2020).

Additionally, Hoyt and Burnette (2020) highlight that while increased GM relates to increased success, an aspect that needs to be acknowledged is that when minorities fail, these failures may be attributed to a lack of GM and neglect the role systemic barriers play. Thus, failures of ethnic minorities may be more likely to be attributed to the individual, rather than systemic barriers. As such, proponents and critics of GM have polarizing views regarding their assumptions of how adopting a GM can greatly benefit or greatly hinder the success of minority groups (Broda et al., 2018; Dweck & Yeager, 2018; Young, 2021).

Nonetheless, there is a need for these questions regarding the benefit of GM for racial minorities to be more intentionally explored within the literature. Furthermore, understanding how systemic structures may be keeping different groups from fully benefiting from endorsing a GM should be explored. Could it be that individuals from

different racial groups have larger disparities in GM effects when compared to others? In other words, do different racial groups benefit more than others from adopting a GM, or are effects similar across all populations? Unfortunately, the literature offers few answers to these questions. This study will add valuable contributions to the body of research on mindset by providing confirming or disconfirming evidence to suggest if GM effects are moderated by race.

The Current Study

The current study has two central aims. First, to expand the theoretical applicability of GM into the workplace, and secondly, to examine if relationships between GM and career variables are moderated by race. In addressing the first aim, the mindset research has mostly neglected to explore the potential positive impact a GM can have among organizations and working professionals outside of an academic environment (Dweck 2006). As mentioned previously, the GM literature has been primarily examined within the realm of academics, investigating GM in employed adults will hopefully expand the theoretical understanding of how GM can be applied to career development (Caniels et al., 2018; Dweck, 2006). The literature points to the suggestion that GM increases career adaptability and career optimism, which in turn, increases work engagement (Caniels et al., 2018; Olender et al., 2020; Safavi & Karatepe). While research attempting to explore the relationships between GM, engagement, and career variables is sparse, the outcome of this study will help fill the gap by offering additional insight that can benefit working professionals and organizations.

In addressing the second aim, this study will attempt to confront questions that can help determine if the effects of GM are moderated by race. Understanding if the

benefits of having a GM vary by race has not been intentionally explored in the literature. This study will contribute needed insight on the potential moderation of these relationships by racial groups.

Based on the review of existing literature the following hypotheses are offered.

1. GM will significantly positively predict work engagement among working professionals (See Figure 1).
- 2a. Career adaptability will significantly mediate the relationship between GM and work engagement among working professionals (See Figure 1).
- 2b. Career optimism will significantly mediate the relationship between GM and work engagement among working professionals (See Figure 1).
3. There will be statistically significant differences in these relationships between racial groups, suggesting that the effect of GM is moderated by race (See Figure 2).

CHAPTER II - METHODS

Participants

A total of 211 study surveys were analyzed. All participants identified as working professionals who lived in the United States and were at least 18 years of age. All participants were recruited from the web service Amazon MTurk. MTurk is a crowd sourcing service that solicits individuals to complete tasks that require human intelligence, including research surveys, for a fee that is dependent on the complexity or time to complete. Empirical investigation suggests that data from MTurk is of higher quality than that from panel or student samples (Kees et al., 2017). Individuals were eligible to participate in the study if they attested to being employed either part-time or full-time in an occupation, were at least 18 years of age, and resided within the United States. The survey was presented in English.

An a priori power analysis was conducted using G*Power version 3.1.9.7 (Faul et al., 2007) to determine the minimum sample size required to test the study hypothesis 1. Results indicated the required sample size to achieve 80% power for detecting a medium effect, at a significance criterion of $\alpha = .05$, was $N = 200$. Thus, the obtained sample size of $N = 211$ was adequate to test the study hypotheses.

Of the final sample, there were 37.0% of participants who identified as female, 0.4% who identified as intersex, and 62.6% who identified as male. The majority of participants were White/Caucasian (41.7%) and Black or African American (25.1%), with the remaining participants identifying as Hispanic/Latino (14.7%), Pacific Islander (0.9%), Alaskan Native (1.9%), Native Hawaiian (0.5%), American Indian (2.8%), Multicultural/Multiracial (1.4%), and Asian American (10.9%). The mean age of

participants was 35.61 years old ($SD = 9.75$). Additionally, 4.7% of participants had a high school diploma, 3.8% had completed some college, 65.4% had a bachelor's degree, 25.6% had a master's degree, and 0.5% had obtained a doctoral degree. Regarding their occupational sectors, the majority of participants were from the information technology industry (35.5%), followed by finance (15.6%). The third most represented occupation was marketing (11.4%). The least represented occupational industry was transportation (0.9%). The majority of participants (56.0%) reported an annual income of \$41,000-\$80,000 dollars. The average tenure was 6.97 years ($SD = 5.66$), ranging from less than a year to 51 years. Detailed demographic data is in Table 2.

Measures

Demographics

As shown in Appendix B, demographic items were used to gather data on participants' age, sex, race, employment status, years in school, education status parents' education level, and current occupational industry.

Growth Mindset

The Growth Mindset Scale (GMS) was created by Dr. Carol Dweck (1999, 2006) with the intent to measure the implicit view an individual has regarding their intelligence. The measure includes three items such as, "Your intelligence is something about you that you can't change very much" (Dweck, 2000). For each item, the respondent answers on a Likert scale (1= *strongly agree* to 6 = *strongly disagree*, Dweck, 1999). Those who have an average score of three or below are categorized as having a GM. Those who have a score of four or above are categorized as not having a GM. In a rigorous evaluation that included six validation studies, preliminary measures that were used to construct the

GMS demonstrated strong reliability and validity (Dweck et al., 1995). An earlier version of the measure using some of the same items to measure GM had internal validity that ranged from .94 - .98 and also had strong test retest reliability over a two-week period which was .80 (Dweck et al., 1995). For the current study, Cronbach's alpha was .79. The means and reliability information for all measures can be found in Table 1. The scoring procedures include averaging the total sum score.

Career Adaptability

The Career Adapt-Abilities Scale (CAAS; Savickas & Porfeli, 2012) is a measure that contains 24 items that includes four subscales used to assess career adaptability to operationalize Savickas' Career Construction theory that results in a total score for career adaptability. Overall, the measure's primary objective is to assess an individual's adaptability by evaluating their concern, control, curiosity, and confidence as it relates to occupational transitions, tasks, and work traumas (Savickas & Porfeli, 2012). One example item is worded in the following way, "Looking for opportunities to grow as a person." (Savickas & Porfeli 2012). Item responses utilize a Likert scale ranging from 1 = *Not Strong* to 5 = *Strongest* (Savickas & Porfeli, 2012) and scores are the average of the sum of scores. This measure has been subject to rigorous confirmatory factor analysis evaluation and has indicated strong reliability for the total score ($\alpha = 0.87$; Savickas & Porfeli, 2012). For the current study, the CAAS had an alpha of .91 indicating excellent reliability.

Career Futures Inventory

The Career Futures Inventory (CFI; Rottinghaus et al., 2005) is a brief 25-item measure of career planning attitudes that target career optimism and career adaptability

(Rottinghaus et al., 2005). The measure has three subscales which are career adaptability, career optimism, and knowledge. While the CFI has different subscales, only the career optimism subscale was used for this study which includes 11 items. Additionally, literature has indicated that the CFI Career Optimism subscale can be used separately by itself without compromising reliability and validity (Delle & Searle, 2022; Garcia et al., 2015). A sample item is worded in the following manner, “I can adapt to change in the world of work” (Rottinghaus et al., 2005). Participants respond to the measure using a 5-point scale for each of the 25 items with 1 = *strongly disagree* to 5 = *strongly agree* (Rottinghaus et al., 2005). The scoring procedures include averaging the total sum score. Statistical analysis and confirmatory factor analysis have demonstrated that the CFI has demonstrated adequate validity and reliability for the optimism subscale ($\alpha = 0.87$) (Rottinghaus et al., 2005). For the current study, the optimism scale had an alpha of .75 indicating acceptable reliability.

Utrecht Work Engagement Scale

The Utrecht Work Engagement Scale (UWES, Schaufeli & Bakker, 2003), was created to capture important facets of work engagement particularly, vigor, drive, and absorption. The UWES has been extensively used as a valid and reliable measure of engagement (Schaufeli et al., 2002; Seppälä et al., 2009). The UWES consists of 17 items that are organized into three subscales. Six items measure vigor, five items measure dedication, and six items measure absorption. Each subscale of the UWES attempts to capture central tenants of engagement that have been identified in the literature (Schaufeli et al., 2002). The vigor can be characterized as the degree of excitement or passion individuals have in their work; drive can be characterized as the commitment and

motivation for occupational tasks; and absorption can be summarized as the degree to which individuals can immerse themselves in a task (Schaufeli et al., 2002). Participants respond to the UWES using a seven-point Likert scale with 0 meaning *Never* to 6 meaning *Always*. An average total score can be used which results in a score that can range between 0 and 6. The reliability of the UWES has been reported to be between .80 - .90 (Schaufeli & Bakker, 2003). A sample item is worded in the following manner, “At my job, I am very resilient, mentally” (Schaufeli & Bakker, 2003). For the current study, the alpha was .91 indicating excellent reliability.

Procedure

Individuals recruited through MTurk and those interested in participating were given a link to the survey hosted on the Qualtrics website. After consenting and agreeing to participate, the survey was displayed, first gathering demographic information. Once demographic information was completed and eligibility to participate was confirmed, individuals completed the study measures which consisted of the GMS, CAAS, CFI, and the UWES. These measures were administered in random order to avoid any potential bias due to order effects. Following successful completion of the survey, participants who passed at least one (of two) validity checks were paid 2.00 USD. One directed response item was used to check for attention (e.g., “Please select agree for this item.”, Meade & Craig, 2012) and one logical response item (“Sometime in my life I have drank water”). Anyone failing both validity items was excluded from the analysis. Additionally, CAPTCHA was used to help determine human input and exclude automated responses from machine input. Quotas were used in Qualtrics to ensure that an approximate balance

for racial groups (White, BIPOC) was achieved. There were 88 participants who reported that their race was White or Caucasian and 123 participants who were BIPOC.

Data Cleaning

A total of 473 participants attempted the survey. There were 250 participants who were white and did not qualify to participate due to quotas for race already being met. There were also 10 survey responses that were deleted due to being duplicate participant responses. The survey used two directed response items to check for attention (e.g., “Please select agree for this item.”; Meade & Craig, 2012). Data from two participants were deleted due to failed validity items. Additionally, mean substitution was used to address missing data for the UWES, CAAS, and the CFI, for 17 unanswered items that was spread across six participants. The final number of successfully completed survey responses was 211. Measures were scored according to the developers’ instructions. To identify outliers, z-scores were computed and any score that was three standard deviations above or below met criteria to be considered an outlier. No outliers were detected in the dataset using this criteria. Table 1 provides the means and standard deviations for the scores of all measures used in the analyses.

CHAPTER III - RESULTS

Hypothesis 1

All analyses were performed using IBM SPSS statistics (Version 25) and using Andrew Hayes' (2022) PROCESS v(4.2) macro for SPSS. The first hypothesis examined the direct effect of GM on work engagement, predicting that working professionals with higher GM are more likely to have higher work engagement scores. Simple linear regression was used to test if GM significantly predicted work engagement ($R^2=.003$, $F(1, 209) = 0.606$, $p = .437$). The results indicated that contrary to our hypothesis, GM ($\beta = -0.054$) did not significantly predict work engagement.

Hypothesis 2

The second hypothesis included two parts (2a/2b) and utilized PROCESS (model 4) to determine if the relationship between GM and work engagement is mediated by career adaptability (2a) and if career optimism mediated the relationship between GM and work engagement (2b). The full model (Figure 1) was significant, [$R^2=.385$, $F(3, 207) = 43.244$, $p = <.001$; constant $\beta = .731$; TIS $\beta = -0.064$, $p = .156$; CAAS: $\beta = 1.052$, $p < .001$; CFI: $\beta = -0.112$, $p = .245$].

Growth mindset scores did not significantly predict adaptability [$\beta = 0.037$, $F(1, 209) = 1.235$, $p = .2676$, $R^2=.006$, CI 95% (-0.029, 0.104)], but growth mindset did significantly predict increased career optimism, [$\beta = 0.154$, $F(1,209) = 20.657$, $R^2=.090$, $p < .001$, CI 95% (0.087, 0.221)]. The direct effect of GM scores on work engagement scores was not significant, [$\beta = -0.064$, $t(207) = -1.426$, $p = .156$, CI 95% [-0.154, 0.025]]. Additionally, the indirect effect of GM on work engagement was not significant [Total: .022, 95% CI (-0.066, 0.107); via CASS: 0.039, 95% CI (-0.035, 0.114); CFI: -0.017,

95% CI (-0.069, .030)]. Thus, contrary to our hypotheses, there was no evidence of mediation.

Hypothesis 3

A moderated mediation using PROCESS (model 8) was used to analyze the third hypothesis examining if the relations between growth mindset and career adaptability and career optimism are moderated by race. Participant races were classified into two groups [White ($N = 86$) and BIPOC ($N = 125$)]. While the overall model (Figure 2) predicting work engagement was significant [$F(5,205) = 26.124$, $R^2 = 0.389$, $p < .001$], race did not moderate the effect of growth mindset has on work engagement [$b = 0.019$, $t = 1.116$, $p = .266$]. The direct effect of career adaptability on work engagement remained significant [$b = 1.053$, $t = 10.761$, $p < .001$, CI 95% (0.860, 1.246)]. The index of moderated mediation for both mediators did not indicate any evidence that career adaptability or career optimism as potential mediators were influenced by race [CFI = 0.001 (95% bootstrap CI = -0.008, 0.009), CAAS = -0.007 (95% bootstrap CI = -0.038, 0.024)]. Moreover, results indicated that there was no moderation by race of GM on career adaptability or GM on career optimism [Career Optimism: $b = -0.009$, (95% bootstrap CI = -0.036, 0.016) $t = -0.742$, $p = .459$; Career Adaptability: $b = -0.007$, (95% bootstrap CI = -0.033, 0.019) $t = -0.516$, $p = .606$]. Lastly, to determine if there were overall differences between the BIPOC group and the majority group regarding GM scores, an independent samples t-test was conducted, results did not detect any statistically significant mean differences between groups on GM scores [BIPOC versus White, $t(209) = 1.545$, $p = .124$].

CHAPTER IV– DISCUSSION

Growth mindset's association with work engagement, while not widely studied, is an emerging topic of interest among researchers who investigate workplace and vocational topics (Caniels et al., 2018; Heslin, 2010). The first hypothesis of this study posited that among working professionals, a GM would predict higher work engagement scores. Although GM was related to increased work engagement in a sample of Chinese teachers (Zeng et al., 2019) and Dutch tech workers (Caniëls et al., 2018), the results from this study did not find a significant predictive relationship.

There are several factors to consider for why there was not a significant connection between GM and work engagement such as sample differences, priming effects of GM in academic settings opposed to job settings, and measurement limitations. First, the sample that was used in the current study was not similar to those of other studies. It is worth noting that the sample for this study was based in the United States while other studies recruited participants from China and the Netherlands. This would suggest that cultural factors and norms may play a potential role in why a predictive relationship was not found in this study. Additionally, it could be that participants obtained from MTurk are less engaged and absorbed in their career, regardless of having a GM, than participants who are recruited using other methods. While the mean score on the UWES did not vary greatly compared to other studies who have used the measure, it may be worth considering that the participant recruitment methods may play a role in the quality of data that is received. Other studies recruited participants through trade unions, healthcare facilities, and corporate organizations (Caniels et al., 2018; Seppälä et al., 2009). These sources of data appear to be more face valid as it relates to quality than a

crowdsourcing platform like MTurk. Moreover, MTurk workers regularly take surveys and it may contribute to fatigue and random responding compared to other data collection sources (Stritch et al., 2017). Relatedly, participants occupational industry may have resulted in lower than normal work engagement levels across other sample populations. The occupation most represented in this study came from the information technology industry which has shown to have lower engagement than other industries. The consulting firm Korn Ferry conducted a nationwide survey in the United States that showed industries ranking the lowest in work engagement came from the information technology sector (Ferry, n.d.). This is to say that sample differences may have contributed to not identifying a relationship between GM and work engagement due to a majority of the sample coming from an overrepresented industry that have traditionally shown lower levels of engagement or reflect cultural differences based on nationality.

Second, GM is mostly utilized in academic settings where the opportunity to apply a GM is more explicit in its focus of intelligence than in job settings. In the initial conceptualization, differences in GM were posited to explain why some students succeeded and others failed. It was found that students who framed and viewed their setbacks as opportunities for growth performed better than those that did not (Dweck 1995). Due to these differences in contexts, it may be that GM operates differently in work settings.

Finally, as our measure of GM focused on intelligence specifically, it may be easier for an individual to demonstrate a GM in academic contexts that focus on achievement that is visible given an assignment or course grade compared to workplace settings where achievement and intelligence are less salient or explicit. In other words,

the measure we utilized may be limited in its ability and scope to accurately assess GM as it relates to employment contexts. This would suggest that a measure that assesses GM more broadly may need to be developed that does not solely focus on intelligence, but also focuses on skills and tasks. For example, instead of an item reading “My intelligence is fixed and there is really nothing I can do about it,” an alternative item may read “I can learn and successfully apply new skills and techniques to become a better employee.”

The second hypothesis was that the relationship between GM and work engagement would be mediated by career adaptability and career optimism. Unfortunately, results showed that career adaptability and career optimism did not mediate the relationship between GM and work engagement. One potential contributing factor for the null findings is likely related to the results for the first hypothesis - that there was no direct predictive relationship between GM and work engagement. Thus, with there being no significant relationship, it would make sense that career optimism and career adaptability would not act as significant mediators because there was no relationship to mediate in the first place. Another contributing factor for why the findings did not support the second hypothesis could be due to a more nuanced and complex relationship between the constructs of GM, work engagement, career adaptability, and career optimism.

There are also other factors to consider which may moderate growth mindset’s effect with work engagement that were not taken into account in this study. These may include an employee’s sense of purpose in their work, feeling valued by their organization, burnout, mental health concerns, and having supportive colleagues and

supervisors (Rastogi et al., 2018). These factors play a prominent role in whether an employee is engaged or disengaged (Pech et al., 2006). This is to suggest that although a participant may have endorsed a growth mindset, if they are not feeling valued by their organization, lack a sense of purpose in work, experience mental health concerns, are feeling burnt out, or have conflicts with their colleagues, these could have been exerting a significant influence on their engagement at work even if they endorsed a growth mindset. In other words, until employees address factors like burnout or conflicts with supervisors, they are likely to be disengaged regardless of having a growth mindset (Rastogi et al., 2018). Alternatively, several studies have found that a significant predictor of work engagement is job performance and satisfaction (Schaufeli et al., 2004; Sonnetag, 2003; Xanthopoulou et al., 2008). Research has suggested that when working professionals have higher performance scores and feel more satisfied, they are more likely to participate in proactive and prosocial behaviors than those who are not. Thus, in order to improve engagement, performance and satisfaction of the employee should be considered (Schaufeli et al., 2004; Sonnetag, 2003; Xanthopoulou et al., 2008). Overall, results may have not demonstrated career adaptability and career optimism as mediators in the relationship between GM and work engagement because other variables may be more closely related to GM.

Although the results were contrary to our hypothesis and there was no mediation, two findings warrant further investigation. Results demonstrated that GM did significantly predict career optimism. This finding is consistent with similar results in a study that examined GM's relationship with career development variables among first-generation college students (Harper, 2022). The study found that first-generation college

students who had a GM also had increased career optimism (Harper, 2022). These findings may be attributed to the conceptual similarities between GM and career optimism as both variables emphasize aspects of growth, adaptation, resilience, and flexibility in the way that setbacks and challenges are viewed (Dweck, 2006; Savickas, 2013). What this finding demonstrates is that when a working professional endorses a GM, career optimism is also greater. While no mediation was detected, the findings support the idea that GM and career optimism are to some extent related in both student and working adult samples.

Relatedly, results showed that career adaptability was positively related to work engagement. This is a valuable finding for employers and organizations who are working on increasing engagement among their workforce. Practical application of this finding may come in the form of an intervention, training, or program to help employees become more adaptive and flexible with workplace challenges and setbacks which would also help them be more engaged as has been shown in the data.

Questions have been raised against GM as it relates to systemic barriers of oppression and whether these factors dilute the effects a GM can have for individuals who come from marginalized groups (Carr et al., 2012; Dweck, 2014; Harper, 2022; Ge et al., 2018). This is to suggest that an individual who comes from a historically underrepresented group may not perform as well as someone who comes from the majority group despite both individuals having a GM. This study aimed to address that question by positing that race would exert a moderating effect on the relationship between GM and work engagement among working professionals. Additionally, we proposed that race also moderated the relationships between GM and career optimism

and career adaptability. Our results indicated that race was not found to moderate the effect GM has on work engagement among working professionals. There also were no significant differences in GM scores between BIPOC and White participants. While the results do not support the hypothesis, they can be viewed favorably because they suggest the effect of GM does not vary by racial group. This is not to imply that systemic barriers of oppression against historically underrepresented groups should be ignored or that they do not play a role in the lives of working professionals, but no identifiable connection was made in this study.

Relatedly, this study showed that the majority of participants came from households that had incomes between \$41,000 – \$81,000 dollars. This places most participants within the middle class. While we did not explore if socioeconomic status (SES) affected these relationships, additional research is needed to explore the effects of GM on participants who come from a lower socioeconomic group which have historically been represented by marginalized communities of color. Prior research has found that GM's effect on achievement is moderated by SES (Ge et al., 2018; King & Trinidad, 2021). A limitation of this study centers on the fact that the sample was perhaps too homogenous with respect to SES. Moving forward, it may be beneficial for researchers to obtain samples with a broader representation across levels of SES.

Limitations

This study, like most, has several limitations that should be addressed. The process of obtaining a sample that met the parameters for this study would have been difficult without the use of MTurk. While using MTurk made data collection timely, it has its potential weaknesses. Chmielewski and Kucker (2020) conducted a reliability

analysis of MTurk and found that it was generally reliable, however, the quality of responses has shown increasing deterioration over time. They found that an increasing number of respondents were failing validity items. Relatedly, Dennis et al. (2020) discussed the evolving threats to using MTurk as a data collection tool and noted that there is an evident weakness in identifying repeated responses. He reported that there are MTurk workers who can get past IP screening procedures and use virtual private servers to take the same survey multiple times without being flagged by MTurk (Dennis et al., 2020). During this study, MTurk successfully filtered individuals who attempted to take the survey multiple times when they used the same IP address, however, it should be noted that additional procedures in place to address the issue of repeat respondents are advised.

Another limitation centers on the issue and weaknesses of cross-sectional data. Because this data was cross-sectional, it only accounts for one point and period of time. The major limitation comes from not being able to make a casual inference about the nature of the relationships examined. In regard to testing mediation, using longitudinal data would be more beneficial to identify causation. Unfortunately, due to time limitations and financial constraints, that method of data collection was not feasible for this study. To circumvent the issues surrounding cross-sectional data, researchers should consider using longitudinal data that looks at multiple points in time to begin to build a case for causal relations.

Lastly, while the Growth Mindset Scale developed by Carol Dweck has been widely used in the literature, it is worth considering whether it fully captures the construct in varying work settings as it primarily focuses on intelligence (Dweck, 2000).

A limitation is that this study used the growth mindset measure which is traditionally meant for students not professionals. Other measures that are inclusive of skills, tasks, and work related duties should be considered for future researchers who investigate GM in professional settings. Although intelligence is a key aspect of Dweck's GM measure, it may be too narrow and unapplicable in settings other than the classroom. Thus, it becomes imperative to develop alternative measures that have utility, validity, and reliability for different settings (Yilmaz, 2022).

Implications and Future Directions

Although the results from this study did not support the proposed hypotheses, they still have several practical implications and warrants questions regarding the applicability and interaction between GM and work engagement. Contrary to the available literature, there was no evidence to demonstrate GM shares a predictive relationship with work engagement in the current study. This raises important considerations for those who are studying GM in the workplace. Because GM does not appear to play a role in predicting how engaged working professionals are in their job, this may indicate that there are other important variables to consider when investigating engagement that have not been researched. While no effect was found, this is not to suggest that investigating the effect of GM in the workplace should be minimized as there has been a body of emerging literature that has pointed to the benefit GM can have in the workplace.

Our results do contribute to the consistent findings that career optimism and GM share a close relationship (Coetzee et al., 2016; Harper, 2022; Tladinyane et al., 2016), with GM being positively related to career optimism. A topic for future exploration is

understanding the mechanisms of that relationship and how it can impact working professionals. A practical implication for this finding may come in the form of training career counselors and employers that developing a GM also aids in the development of career optimism. Lin et al. (2022) conducted a meta-analysis that found career optimism in the workplace was associated with favorable outcomes that included higher career choice satisfaction, career decisiveness, and reduced emotional exhaustion. Relatedly, McIveen & Perera (2016) discovered that educators who had increased levels of career optimism, also had higher levels of conscientiousness. As GM has been shown to predict career optimism, it may be worthwhile to understand this relationship in depth due to the positive outcomes associated with career optimism.

Additionally, while GM was not found to predict work engagement, career adaptability did significantly predict work engagement. This finding is consistent with what has been previously found in other samples and has the potential for producing a practical implication that can benefit working professionals (Coetzee et al., 2016; Yang et al., 2019). Researchers have developed interventions for professionals and organizations to improve different aspects of career development, optimism, and engagement (Marko & Savickas, 1998). Specific interventions used to facilitate professional development and growth have focused on values identification, critical thinking, goal setting, and communication skills (Fretz, 1981). It may be beneficial for employers, organizations, and vocational researchers to consider integrating interventions, trainings, and programs to increase career adaptability that will likely increase engagement as well.

This study aimed to sensitively explore, and understand more clearly, potential racial disparities in GM given that Harper (2022) found that BIPOC college students

were less likely to endorse a GM compared to their majority peers. Additionally, literature also found that the maximum benefits of GM are dependent on racial identity and socioeconomic status (Ge et al., 2018; King & Trinidad, 2021). The results from these studies posed questions about the applicability of GM theory across different marginalized groups. Although the results of the third hypothesis contradicted previous findings, it is beneficial to know that among working professionals in this sample, adopting a GM has a similar effect across groups and one group is not more likely than another to receive a greater effect. Yet, given some evidence that SES may affect GM, further research examining if GM is affected by demographic factors is needed.

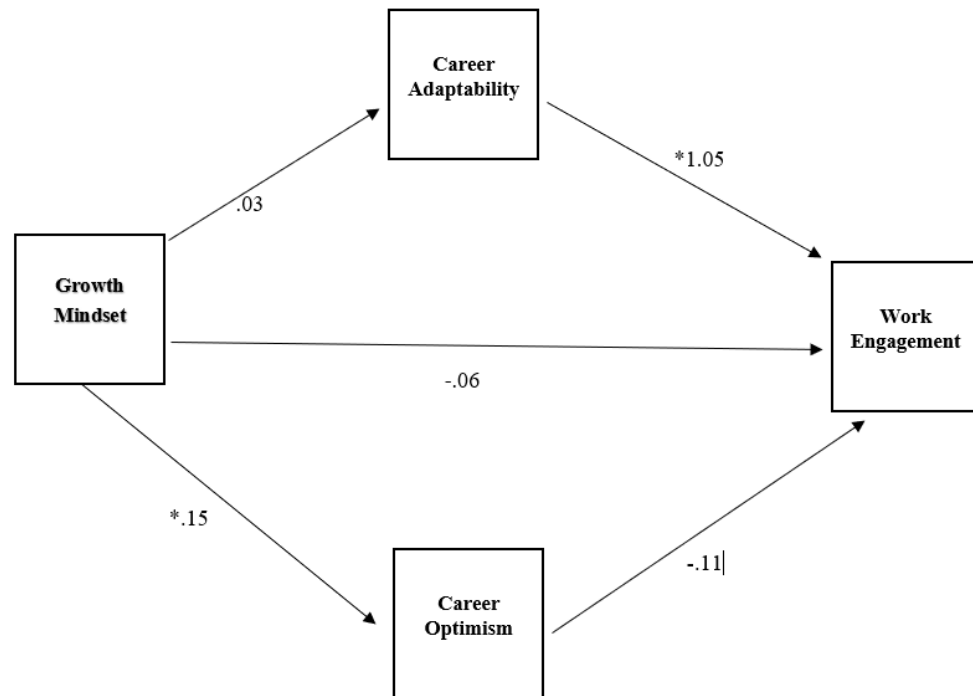
For example, a question that should be addressed in future research is understanding whether the effect of GM is less significant as individuals age. There could be a possibility that adopting a GM is more important and beneficial for children and adolescents than adults. While literature on GM across the lifespan is limited, Brown et al. (2023) found that among older adults, a GM related to aging did not reduce implicit old-age attitude or self-perceptions of aging. These findings indicate that the effect of GM among certain categories like perceptions and attitudes may decrease with age. However, Sheffler et al. (2022) found that adopting a GM among older adults increased cognitive gains compared to a control group. Overall, future research should continue exploring the effect of GM throughout the lifespan and across demographic factors.

While the outcome of this study did not support the proposed hypotheses, valuable findings were still identified. GM was found to predict career optimism and career adaptability was found to predict work engagement. These findings can be applied in a variety of different organizations to help individuals understand how they can

achieve greater work engagement and optimism in their careers. In addition, no racial differences in GM, or GM's relationship with other variables, were found. The research has indicated that adopting a GM in the workplace has benefited employees in areas of performance, taking on more challenging work, and managing setbacks more effectively (Caniels et al., 2018; Dweck, 2006). In sum, GM, career optimism, career adaptability, and work engagement are constructs that have demonstrated their value and applicability among working professionals and the role they play in fostering success. Moving forward, researchers should continue to consider the impact these variables play in the lives of working professionals so as to promote greater resilience, adaptability, engagement, and optimism.

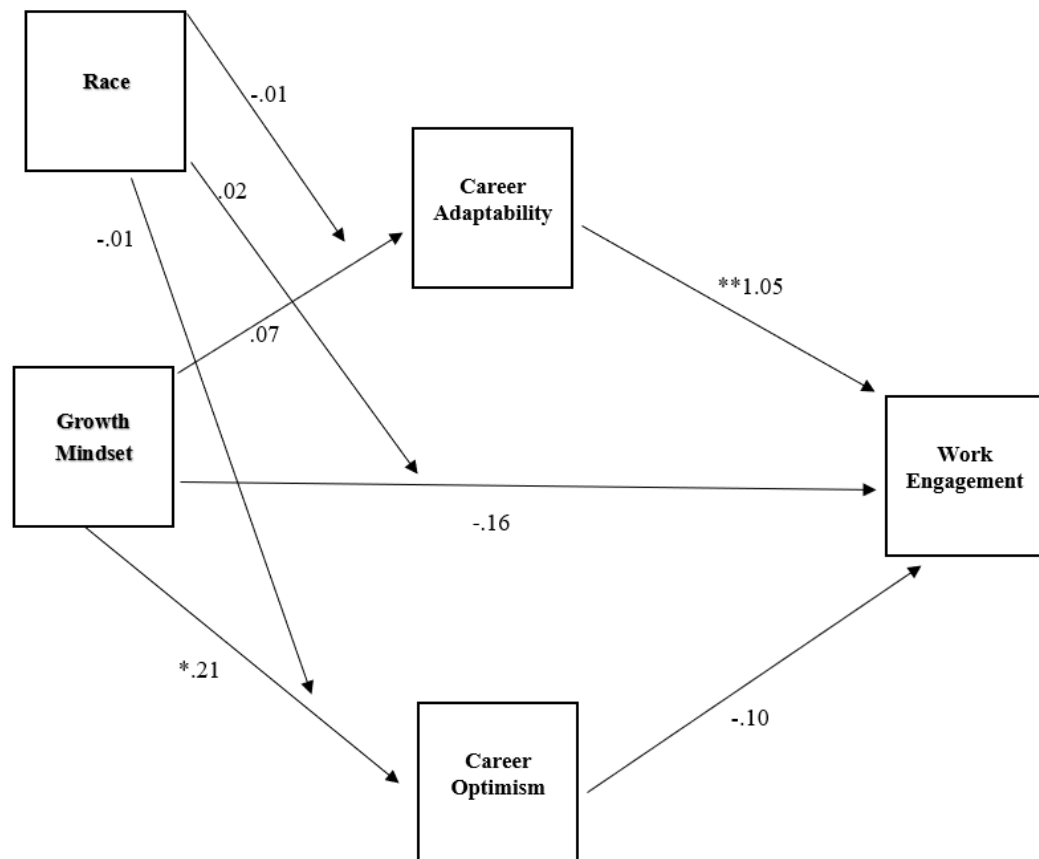
APPENDIX A - Tables and Figures

Figure A1. *Mediation Model.*



Note: * = $p < .001$, $N = 211$

Figure A2. *Moderated Mediation Model.*



Note. * = $p < .05$, ** = $p < .001$

Table A1. *Means, standard deviations, correlations, and reliability for measures for the total sample.*

	Mean (SD)	CFI	CAAS	TIS	UWES
1. CFI Optimism	3.31 (0.561)	.752			
2. CAAS	3.85 (0.532)	.412**	.914		
3. TIS	2.68 (1.093)	.300**	.077	.799	
4. UWES	4.24 (0.867)	.169*	.609**	-.015	.912

Note: Reliabilities are on the diagonal (Cronbach's alpha), * = $p < .05$, ** = $p < .01$, *** = $p < .001$, CFI = Career Futures Inventory; CAAS = Career Adapt Abilities Scale; TIS = Theories of Intelligence Scale; UWES = Utrecht Work Engagement Scale, N = 211

Table A2. *Sample demographics*

	<i>n</i>	%
Gender		
Female	78	37%
Male	133	63%
Race		
White	88	41.7%
Black	53	25.1%
Hispanic/Latino	31	14.7%
Pacific Islander	2	0.9%
Alaskan Native	4	1.9%
Native Hawaiian	1	0.5%
American Indian	6	2.8%
Multiracial	3	1.4%
Asian American	23	10.9%
Occupation		
Agriculture	5	2.4%
Architecture	5	2.4%
Arts, audio/video technology and communications	3	1.4%
Education and training	9	4.3%
Finance	35	16.6%
Public administration	1	0.5%
Health science	14	6.6%
Hospitality and tourism	12	5.7%
Human services	3	1.4%
Information technology	75	35.5%
Manufacturing	13	6.2%
Marketing, sales, and services	24	11.4%
STEM	6	2.8%
Transportation, distribution, and logistics	2	0.9%
Other	4	1.9%
Highest educational level		
High school diploma	10	4.7%
Some college	8	3.8%
Bachelor's degree	138	65.4%
Master's degree	54	25.6%
Doctoral degree	1	0.5%
Income		
Less than \$20,000	1	2.4%
\$21,000-\$40,000	36	1.4%
\$41,000-\$60,000	63	4.3%
\$61,000-\$80,000	55	16.6%
\$81,000-\$100,000	26	0.5%
\$101,000-\$150,000	23	6.6%
Over \$150,000	7	3.3%

APPENDIX B - Measures

Growth Mindset Scale (Dweck, 1999)

Using the scale below, please indicate the extent to which you agree or disagree with each of the following statements by writing the number that corresponds to your opinion in the space next to each statement.

1 (Strongly Agree)	2 (Agree)	3 (Mostly Agree)	4 (Mostly Disagree)	5 (Disagree)	6 (Strongly Disagree)
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1. You have a certain amount of intelligence, and you can't really do much to change it.
2. Your intelligence is something about you that you can't change very much
3. You can learn new things, but you can't really change your basic intelligence.

Career Futures Inventory
(CFI; Rottinghaus et al., 2005)

Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<i>Career Optimism</i>	1	2	3	4	5
I am good at adapting to new work settings.	1	2	3	4	5
I can adapt to change in my career plans	1	2	3	4	5
I can overcome potential barriers that may exist in my career.	1	2	3	4	5
I enjoy trying new work-related tasks.	1	2	3	4	5
I can adapt to change in the world of work.	1	2	3	4	5
I will adjust easily to shifting demands at work.	1	2	3	4	5
Others would say that I am adaptable to change in my career plans.	1	2	3	4	5
My career success will be determined by my efforts.	1	2	3	4	5
I tend to bounce back when my career plans don't work out quite right.	1	2	3	4	5
I am rarely in control of my career.	1	2	3	4	5
I am not in control of my career success.	1	2	3	4	5
<i>Career Optimism</i>					
I get excited when I think about my career.	1	2	3	4	5
Thinking about my career inspires me.	1	2	3	4	5
Thinking about my career frustrates me.	1	2	3	4	5
It is difficult for me to set career goals.	1	2	3	4	5
It is difficult to relate my abilities to a specific career plan.	1	2	3	4	5
I understand my work-related interests.	1	2	3	4	5
I am eager to pursue my career dreams.	1	2	3	4	5
I am unsure of my future career success.	1	2	3	4	5
It is hard to discover the right career.	1	2	3	4	5

Planning my career is a natural activity.	1	2	3	4	5
I will definitely make the right decisions in my career.	1	2	3	4	5
<i>Knowledge</i>					
Knowledge I am good at understanding job market trends.	1	2	3	4	5
I do not understand job market trends.	1	2	3	4	5
It is easy to see future employment trends.	1	2	3	4	5

Career Adapt-Abilities Scale

(CAAS; Savickas & Porfeli., 2012)

Questions	Not Strong	Somewhat Strong	Strong	Very Strong	Strongest
<i>Concern</i>					
Thinking about what my future will be like	1	2	3	4	5
Realizing that today's choices shape my future.	1	2	3	4	5
Preparing for the future	1	2	3	4	5
Becoming aware of the educational and career choices that I must make	1	2	3	4	5
Planning how to achieve my goals	1	2	3	4	5
<i>Control</i>	1	2	3	4	5
Keeping upbeat	1	2	3	4	5
Making decisions by myself	1	2	3	4	5
Taking responsibility for my actions	1	2	3	4	5
Sticking up for my beliefs	1	2	3	4	5
Counting on myself	1	2	3	4	5
Doing what's right for me	1	2	3	4	5
<i>Curiosity</i>	1	2	3	4	5
Exploring my surroundings	1	2	3	4	5
Looking for opportunities to grow as a person.	1	2	3	4	5
Investigating options before making a choice	1	2	3	4	5
Observing different ways of doing things	1	2	3	4	5
Probing deeply into questions I have	1	2	3	4	5
Becoming curious about new opportunities	1	2	3	4	5
<i>Confidence</i>	1	2	3	4	5
Performing tasks efficiently	1	2	3	4	5
Taking care to do things well	1	2	3	4	5
Learning new skills	1	2	3	4	5
Working up to my ability	1	2	3	4	5
Overcoming obstacles	1	2	3	4	5
Solving Problems	1	2	3	4	5

Utrecht Work Engagement Scale

(UWES, Schaufeli & Bakker, 2003)

The following 17 statements are about how you feel at work. Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, cross the '0' (zero) in the space after the statement. If you have had this feeling, indicate how often you feel it by crossing the number (from 1 to 6) that best describes how frequently you feel that way.

	Almost never	Rarely	Sometimes	Often	Very often	Always
0	1	2	3	4	5	6
Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day

1. _____ At my work, I feel bursting with energy* (VI1)
2. _____ I find the work that I do full of meaning and purpose (DE1)
3. _____ Time flies when I'm working (AB1)
4. _____ At my job, I feel strong and vigorous (VI2)*
5. _____ I am enthusiastic about my job (DE2)*
6. _____ When I am working, I forget everything else around me (AB2)
7. _____ My job inspires me (DE3)*
8. _____ When I get up in the morning, I feel like going to work (VI3)*
9. _____ I feel happy when I am working intensely (AB3)*
10. _____ I am proud on the work that I do (DE4)*
11. _____ I am immersed in my work (AB4)*
12. _____ I can continue working for very long periods at a time (VI4)
13. _____ To me, my job is challenging (DE5)
14. _____ I get carried away when I'm working (AB5)*
15. _____ At my job, I am very resilient, mentally (VI5)
16. _____ It is difficult to detach myself from my job (AB6)
17. _____ At my work I always persevere, even when things do not go well (VI6)

APPENDIX C- Demographics Form

Please provide the following information about yourself and your household.

Please provide your age: _____ years

What is your Date of Birth: _____
(Month, day, year)

What is your sex?

- Female
- Male
- Intersex
- Prefer to self-describe (_____)
- Prefer not to say

What is your Race/Ethnicity?

- Alaskan Native
- Black or African American
- Native Hawaiian
- American Indian
- Hispanic/Latino
- Pacific Islander
- Asian / Asian American
- White or Caucasian
- Multicultural/Multiracial

Are you Hispanic?

- ☐ Yes
- ☐ No
- ☐ Prefer not to Say

What is your Gender Identity (select all that apply):

- Woman
- Man
- Non-binary/Third gender

- Transgender woman
- Transgender man
- Agender
- Genderqueer
- A gender not listed
- Prefer to self-describe (_____)
- Prefer not to say

In what state do you live? _____

What is your yearly Estimated Family/household Income (before taxes)?

- ___ Less than \$20,000
- ___ \$21,000-\$40,000
- ___ \$41,000-\$60,000
- ___ \$61,000-\$80,000
- ___ \$81,000-\$100,000
- ___ \$101,000-\$150,000
- ___ Over \$150,000
- ___ Unknown
- ___ I choose to not disclose this information

What is your education level?

- ___ High School Diploma
- ___ GED
- ___ Some College
- ___ Bachelor's Degree
- ___ Master's Degree
- ___ Doctoral Degree

Are you employed?

- ___ Yes
- ___ No

If yes, Please provide the following information for the primary job you currently have (items 9 -11).

Do you work at this job at least 35 hours per week at this location? (If “No” “You cannot participate in this survey.”)

How long have you been employed in this job? _____years, _____months

How many hours per week, on average, do you work at this job? _____hours

What is your job title: _____

Which of the following best describes your current (main) occupational category:

- a. agriculture, food and natural resources
- b. architecture and construction
- c. arts, audio/video technology and communications
- d. business, management and administration
- e. education and training
- f. finance
- g. government and public administration
- h. health science
- i. hospitality and tourism
- j. human services
- k. information technology
- l. law, public safety, corrections, security
- m. manufacturing
- n. marketing, sales and service
- o. science, technology, engineering, mathematics
- p. transportation, distribution and logistics
- q. none of the above: _____

APPENDIX D – Informed Consent Form



INSTITUTIONAL REVIEW BOARD STANDARD (ONLINE) INFORMED CONSENT

STANDARD (ONLINE) INFORMED CONSENT PROCEDURES		
<p>The Project Information and Research Description sections of this form should be completed by the Principal Investigator before submitting this form for IRB approval. Use what is given in the research description and consent sections below when constructing research instrument online.</p> <p style="text-align: right;"><small>Last Edited May 13th, 2019</small></p>		
Today's date: 7/21/2022		
PROJECT INFORMATION		
Project Title: GROWTH MINDSET: EXPLORATION OF CAREER DEVELOPMENT, EMPLOYEE ENGAGEMENT, AND DISPARITY AMONG WORKING PROFESSIONALS		
Principal Investigator: Dillon Harper	Phone: 480-707-3957	Email: dillon.harper@usm.edu
College: Education and Human Sciences	School and Program: Psychology, Counseling	
RESEARCH DESCRIPTION		
<p>1. Purpose:</p> <p>The purpose of this study is to understand how working adult's mindset affects their career development. The outcomes of this study may help inform ways to support individuals' career development that to lead to greater engagement in one's job. Should you meet eligibility criteria to participate, we ask you read this form before agreeing to participate in this study. "</p> <p>2. Description of Study:</p> <p>If you agree to be in this study, you will be asked to do the following things: Your participation will involve completing several questionnaires about your education, career planning, and attitudes, and a biographical information sheet. You will be asked to complete these measures online. You must be at least 18 years old to participate in this research.</p> <p>Participants can expect that it takes an estimated 15 - 20 minutes to respond to all questions. As compensation for your time, you will be awarded a fee. Quality assurance checks will be used to make sure that participants are reading each question carefully and answering thoughtfully. Participants who do not pass these checks will NOT receive compensation for completing the study.</p> <p>3. Benefits:</p> <p>There are no direct benefits to you for participating in the study. Yet some people may report greater self-awareness about their attitudes as a result of taking questionnaires.</p> <p>4. Risks:</p> <p>We do not anticipate any risks associated with participating in the study. However, we do note that Amazon MTurk's process involves a user ID which carries a risk of being identified as a participant. You may find that a few of the questions are sensitive in nature, may be difficult to answer, or that</p>		

you may become bored or fatigued when completing questions. As your survey responses will not be anonymous there is a risk that your confidentiality can be breached.

5. Confidentiality:

The records of this study will be kept private. Your identity will be kept confidential and your name will never be used to identify any of the information you have provided. In any sort of report that might be published from this data, no information will be included that will make it possible to identify a participant. Research records will be stored securely and only the researchers involved in this study will have access to the research records or your responses to study questions.

6. Alternative Procedures:

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University of Southern Mississippi, the School of Psychology, or others. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

7. Participant's Assurance:

This project and this consent form have been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research participant should be directed to the Chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5125, Hattiesburg, MS 39406-0001, 601-286-5997.

Any questions about this research project should be directed to the Principal Investigator using the contact information provided above.

CONSENT TO PARTICIPATE IN RESEARCH

I understand that participation in this project is completely voluntary, and I may withdraw at any time without penalty, prejudice, or loss of benefits. Unless described above, all personal information will be kept strictly confidential, including my name and other identifying information. All procedures to be followed and their purposes were explained to me. Information was given about all benefits, risks, inconveniences, or discomforts that might be expected. Any new information that develops during the project will be provided to me if that information may affect my willingness to continue participation in the project.

Include the following information only if applicable. Otherwise delete this entire paragraph before submitting for IRB approval: The University of Southern Mississippi has no mechanism to provide compensation for participants who may incur injuries as a result of participation in research projects. However, efforts will be made to make available the facilities and professional skills at the University. Participants may incur charges as a result of treatment related to research injuries. Information regarding treatment or the absence of treatment has been given above.

CONSENT TO PARTICIPATE IN RESEARCH

By clicking the box below, I give my consent to participate in this research project.

☐ Check this box if you consent to this study, and then click "Continue." (Clicking "Continue" will not allow you to advance to the study, unless you have checked the box indicating your consent.)

If you do not wish to consent to this study, please close your browser window at this time.

APPENDIX E – IRB Approval Letter

Office of Research Integrity

118 COLLEGE DRIVE #5116 • HATTIESBURG, MS | 601.266.6756 | WWW.USM.EDU/ORI



NOTICE OF INSTITUTIONAL REVIEW BOARD ACTION

The project below has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services regulations (45 CFR Part 46), and University Policy to ensure:

- The risks to subjects are minimized and reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered involving risks to subjects must be reported immediately. Problems should be reported to ORI via the Incident submission on InfoEd IRB.
- The period of approval is twelve months. An application for renewal must be submitted for projects exceeding twelve months.

PROTOCOL NUMBER: 22-1418
PROJECT TITLE: Growth Mindset: Exploration of career development, employee engagement, and disparity among working professionals
SCHOOL/PROGRAM: Psychology
RESEARCHERS: PI: Dillon Harper
Investigators: Harper, Dillon~Leuty, Melanie~
IRB COMMITTEE ACTION: Approved
CATEGORY: Expedited Category
PERIOD OF APPROVAL: 18-Oct-2022 to 17-Oct-2023

Donald Sacco, Ph.D.
Institutional Review Board Chairperson

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