THE IMPACT OF SELF-STIGMA AND SELF-DETERMINATION ON CAREER OUTCOMES OF TRANSITION-AGE INDIVIDUALS WITH DISABILITIES: A STRUCTURAL EQUATION MODELING APPROACH

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ABSTRACT

Individuals with disabilities were long considered the most stigmatized and marginalized population in society. In response to that, substantial research initiatives were conducted in the discussion of stigma and its impact on individuals with disabilities. However, the literature has been mainly directed toward those with mental illness; little was discussed for another subgroup of the population such as transition-age individuals with disabilities. Further, its relationship with other psychological factors (i.e., basic psychological needs; autonomy, competence, and relatedness) and their impact on career outcomes were seldom construed as a necessary research topic. To address a research gap, the current study aimed to (a) examine the relationship between self-stigma, self-determination, and career outcomes among transition-age individuals with disabilities and (b) suggest a new theory-driven and empirically validated model with the constructs of interest. The current research was designed as a cross-sectional survey study by recruiting eligible participants who are identified as transition-age individuals with disabilities and asking them to complete a 15-20 minutes survey. For the data analysis, the study used Structural Equation Modeling (SEM) to test a model fit and estimate path parameters. This study is expected to serve as the first research attempt to identify the full range of dynamics between self-stigma, self-determination, and career outcomes and outline a new conceptual framework to explain career preparation and outcomes among transition-age individuals with disabilities.

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CHAPTER 1: INTRODUCTION

Introduction

This chapter provides an overview of the research background and variables of interest in the current study—self-stigma, self-determination, motivation, engagement, and career outcomes. Also, the statement of the problem, the purpose of the study, and the anticipated significance of the study are discussed.

Over the past few decades, the perspective of viewing disability away from the pathologic state has been emphasized as society has begun to understand that medical diagnosis confines people with disabilities in stigmatizing categories (Nagi, 1969; Smart & Smart, 2006). Stigmatized individuals are often perceived as human beings who are deeply discredited due to a certain attribute, and they have often been separated from the community by being labeled as an unusual group of people (Goffman, 1997). The deleterious effects of public stigma on individuals and society are well-documented in the literature, including status loss, decreased psychological well-being and health, stereotyping, discrimination, and social injustice (Corrigan et al., 2005; Green et al., 2005; Quinn & Chaudoir, 2015). Some individuals go far beyond acknowledging widely spread and entrenched public stigma and even endorse those stigmas as one of their identities, which is called self-stigma (Corrigan et al., 2005; Corrigan et al., 2006). It has been found that those with a high level of self-stigma are more likely to experience negative consequences in individuals' disrupted self-concept, loss of hope and self-respect, a sense of futility, less pursuit of life goals, and hesitancy in help-seeking behavior (Corrigan et al., 2009; Corrigan et al., 2011; Corrigan et al., 2016).

One such population who is threatened by public and self-stigma is people with disabilities, and they are often regarded as one of the most excluded and marginalized populations in our society (United Nations, n.d.). Among them, people with mental disabilities

are the subgroup of a population who received pronounced attention for stigma-related research and practice (Ditchman et al., 2013) and less has pertained to individuals with other types of disabilities or who are in a unique developmental phase. In response to the research gap, the population of interest in the current study is set as transition-age individuals with disabilities (e.g., high school/college/graduate students with disabilities or youth/young adults with disabilities). Given that they go through a critical developmental phase of forming personal identity and developing an initial choice of career to try out for adult life (Levinson, 1986), the negative impacts of self-stigma may bring additional difficulties in forming positive self-concepts and pursuing career aspirations. Previous studies were also concerned about the fact that young adults tend to be at greater risk of high self-stigma than their older counterparts (Mackenzie et al., 2019a; Mackenzie et al., 2019b; Werner et al., 2008). While it is evident that stigma threatens individuals' self-dignity and the basic philosophy of social justice that everyone should be treated equitably, the full range and impact of self-stigma on individuals with disabilities, particularly those in a transition period are yet clearly elaborated. Moreover, individuals' vocational outcomes have not been counted as a primary research topic as related to psychosocial factors.

To illuminate a potential mechanism for how self-stigma impacts individuals' career outcomes, the current study embedded crucial psychosocial factors – basic psychological needs, intrinsic work motivation, and career engagement in the relationship between self-stigma and career outcomes (**Figure 1.1**). According to the Self-Determination Theory (Ryan & Deci, 2000), when individuals are satisfied with their basic psychological needs, they are likely to become more self-determined and enact inherent growth behaviors. However, when individuals are in an environment where satisfaction with the basic psychological needs is less conducive,

intrinsic motivation is unlikely to result, leading to decreased well-being, less engagement, and increased negative affect (Van den Broeck et al., 2016; Ryan & Deci, 2002). These premises are similarly applicable to individuals with disabilities; satisfying the basic needs of self-determination is crucial in predicting motivation, engagement, achievement, and psychological well-being among the population (Akkerman et al., 2018; Deci et al., 1992; Garrels & Arvidsson, 2019; O'Shea et al., 2023).

With regard to motivation, research findings agreed on its determining effect on the direction and magnitude of individuals' actions (Dörnyei & Ushioda, 2011). In light of self-determination theory, individuals' motivation is conceptualized as a construct that lies on a continuum from amotivation through extrinsic motivation to intrinsic motivation (Ryan & Deci, 2002). Across different empirical research findings, intrinsic motivation was pointed as the most desirable and ideal form of motivation in that it is associated with individuals' engagement (e.g., students' study behaviors and employees' creativity; Martens et al., 2004; Paramitha & Indarti, 2014) and goal-related behaviors (e.g., achievement and goal persistence; Heyman & Dweck, 1992; Lavigne & Vallerand, 2010). However, not everyone's action is merely intrinsically prompted; rather a mixture of intrinsic and extrinsic motivation often drives one's behaviors (Ryan & Deci, 2002). In fact, as far as individuals can internalize the values of behaviors and integrate the autonomy of taking action to a certain extent, positive consequences of those actions would be as likely to be realized as those prompted by internal motivation (Ryan & Deci, 2002).

Engagement is drawn from an individual's motivation, described as high involvement, presence of commitment, and on-task attention (Reeve, 2012; Newmann et al., 1992). Engagement has been thought of as an important construct, especially in the fields that highly

value individuals' autonomous motivation and intention of enacting adaptive behaviors due to its close linkage to achievement outcomes (e.g., successful post-school outcomes, less social alienation, academic outcomes; Fleming et al., 2017; Test et al., 2009; Wiseman et al., 1988). While acknowledging the direct impact of engagement on individuals' positive achievement, the current study aims to expand the scope of traditional research into exploring its role as a mediator between psychosocial functioning and achievement. In fact, a fair number of studies found a significant mediating effect of engagement; for example, Reeve & Tseng (2011) found that agentic engagement fully mediates the relationship between basic psychological needs satisfaction and academic achievement among high school students. Sulea et al. (2012) also revealed that environmental support impacts employees' positive work-related behaviors with the partial mediating effects of work engagement.

While there has been extensive literature concerning self-stigma, basic psychological needs, motivation, and engagement respectively, fewer research initiatives have been realized to explore the relationship among those constructs, particularly for transition-age individuals with disabilities. Given such a research gap and increasingly acknowledged career support needs for individuals with disabilities since the enactment of the Individuals with Disabilities Education Act (IDEA; 2004) and Workforce Innovation and Opportunity Act (WIOA; 2014) over the past few decades, it has become imperative to examine interrelationship among those constructs to explain individuals' career outcomes and ultimately building an empirically supported theoretical framework.

Statement of Problem

Individuals in the transition period from school/outside of school to career are typically in the crucial developmental phase of navigating through their educational, employment, and

overall life roles and trying out initial thoughts of career and lifestyle options (Levinson, 1986; Super, 1990). Although how individuals spend this period of time is a strong predictor of determining successful transition outcomes (Gil, 2007; Test et al. 2009), achieving these tasks does not always come easily to everyone, and individuals with disabilities may experience more challenges than those without disabilities (Mazzotti & Rowe, 2015). The most recent national data set of post-high school outcomes for young adults with disabilities showed a grim transition outcome; although as many of them were employed as peers without disabilities after graduation (i.e., 71.1 and 70.7%, respectively; Sanford et al., 2011), their average wage tended to be lower than that of their peers without disabilities ($9.40 and $13.20, respectively; Sanford et al., 2011); those with disabilities were less likely to enter post-secondary school than peers without disabilities (i.e., 54.9 and 62.1%, respectively; Sanford et al., 2011). Overall, they showed less community engagement through employment, education, or employment training compared to their peers without disabilities (i.e., 84.9 and 94.6%, respectively), and the level of engagement falters notably by disability type; the group of people who have multiple disabilities, deaf-blindness, intellectual disability, and autism spectrum disorder ranked in the lowest tier in community engagement (Sanford et al., 2011).

In response to concerning statistics, there have been growing research and practice initiatives to support transition-age individuals with disabilities. For example, self-determination skills that entail autonomy, empowerment, and self-realization have been represented as significant predictors for successful post-secondary education or employment among individuals with disabilities (Berry et al., 2012; Garberogilo et al., 2014; Malian & Nevin, 2002; Wehmeyer & Schwartz, 1997). Another notable factor that impacts individuals' community engagement and psychosocial well-being is self-concept; individuals who have a positive self-concept were more

likely to have positive psychosocial and academic outcomes such as increased self-esteem, better social acceptance, and improved academic achievement (Heyman, 1990; Rothman & Cosden, 1995), whereas those with high self-stigma were likely to experience psychosocial challenges such as decreased psychological well-being, low engagement in treatment and impeded academic performance (Guarneri et al., 2019; Kong et al., 2021). A wide variety of interventions were also developed to inform the useful strategy to increase one's self-determination skills (Konrad et al., 2007; Shogren et al., 2018) and decrease self-stigma status (Corrigan et al., 2013; Fung et al., 2011).

Despite these noteworthy research findings and relevant intervention development, the linkage between self-determination and self-stigma was seldom construed as an essential research topic, and most of the studies appeared to be constrained to either one of the constructs to date. However, previous literature allows a justifiable argument that self-stigma may serve as a thwarting context for self-determination (Vansteenkiste et al., 2020). Indeed, one of the well-known stigma-related frameworks called the *Why Try* model conceptualized how self-stigma negatively affects behavioral outcomes such as goal pursuit behaviors via impacting individuals' self-concept (e.g., self-esteem and self-efficacy; Corrigan et al., 2009). Subsequently, similar findings converged regarding the negative impact of self-stigma on basic psychological needs such as decreased autonomy, thwarted active decision-making, and impeded relationships with others (Caqueo-Urízar et al., 2020; Denenny et al., 2015; Hamann et al., 2017; Vansteenkiste et al., 2020). Still, understanding the connection between self-stigma and self-determination and empirically investigating how these factors impact career outcomes for individuals with disabilities fell short.

Statement of Purpose

During the past few decades, it has been well-acknowledged that improving transition outcomes for individuals with disabilities requires a multilevel approach. On the macro level, establishing a legal and regulatory basis for providing appropriate pre-employment transition services such as career exploration, post-secondary education opportunities, training on self-advocacy, and work-based learning programs for individuals with disabilities appeared crucial (National Technical Assistance Center on Transition, n.d.), and well-developed transition programs have been reported as a predictor for successful career outcomes (Benz et al., 1997; Repetto et al., 2002). On the meso level, collaborative support from different systems, including schools, vocational rehabilitation agencies, and families would be needed to help individuals practice community living and be prepared for social integration (Bullis & Davis 1995; IDEA, 2004; Repetto et al., 2002). On a micro level, multiple skill sets individuals possess predict their successful transition outcomes including self-advocacy, self-determination, independent living skills, and social skills (Benz et al., 1997; Halpern et al., 1995; Roessler et al., 1990; Wehmeyer & Schwartz, 1997). This study will focus on the micro level to understand individuals' psychosocial mechanisms leading to successful career outcomes with the variables of self-stigma, basic psychological needs, motivation, and engagement.

Given the dearth of related studies and the growing support needs of the population of interest, the current study aimed to illuminate the relationship among psychosocial variables and propose a new model for successful transition outcomes among individuals with disabilities. The model and pathways that the current research aimed to identify are illustrated in **Figure 1.1**, and the research questions (RQs) for the current study are described below:

RQ1: How well do the survey items account for the latent variables?

RQ2: How do self-stigma, basic psychological needs, intrinsic work motivation, and career engagement interact and impact career outcomes among transition-aged individuals with disabilities?

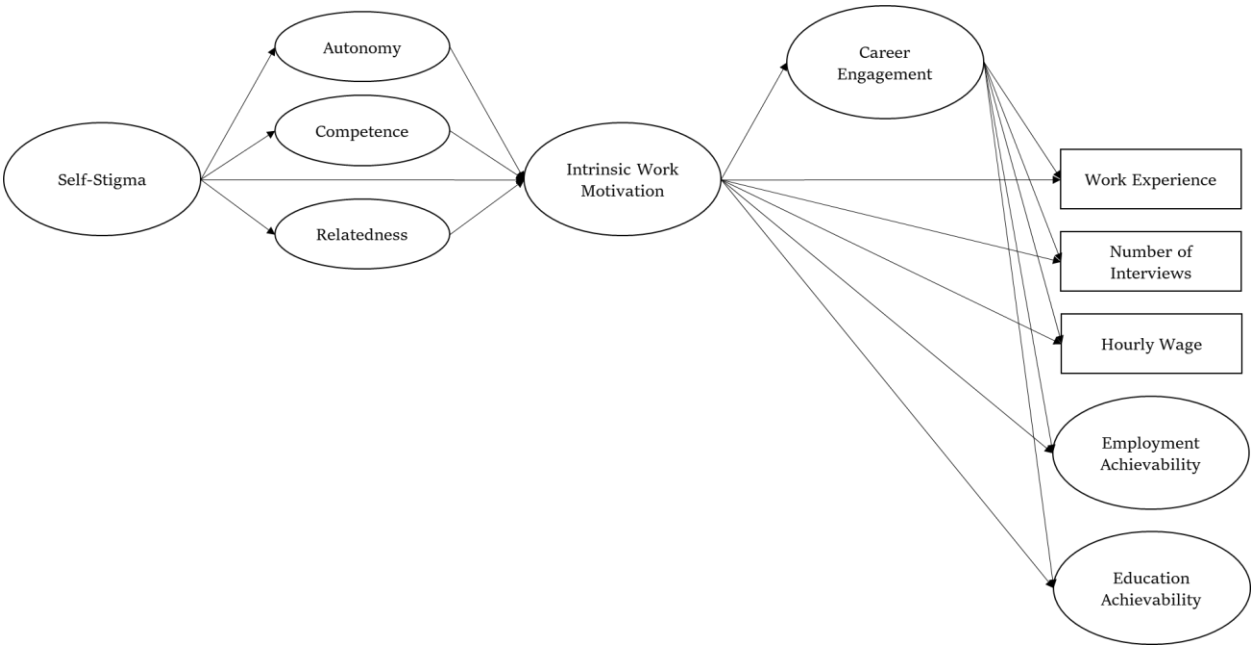
RQ2.1: How does the proposed model fit the data collected?

RQ2.2: Is there an indirect effect of basic psychological needs in the relationship between self-stigma and intrinsic work motivation?

RQ2.3: Is there an indirect effect of career engagement in the relationship between intrinsic work motivation and career outcomes?

Figure 1.1

Proposed Research Model Visual



Significance of the Study

In response to the concerning transition outcomes of transition-age individuals with disabilities, many research initiatives have been undertaken. This study will be added to such ongoing efforts by identifying the relationships between individuals' psychological factors and

transition outcomes. To the best of the author's knowledge, this study will be the first research attempt to comprehensively examine the relationships among self-stigma, basic psychological needs, motivation, engagement, and transition outcomes. Also, this study will serve as one of the few stigma-related studies that deviate from the long-directed population, people with mental disabilities, and expand the attention to individuals with other disabilities who are in the unique developmental stage, transitioning into the world of work. Therefore, it is anticipated that the current research aids in establishing a new framework that would allow a unique understanding of the psychological factors of individuals with disabilities and their impact on transition outcomes.

The current study will have significance on multiple levels: practice, research, and society. First, on the practice level, this study would help practitioners better understand the psychological mechanisms of individuals with disabilities who are in the phase of career planning and advocate for their support needs, especially when they have high self-stigma and less realization of self-determination. Also, an empirically grounded and theory-based clinical guideline (e.g., interventions for reducing self-stigma and improving self-determination) could be developed based on the findings of the study and implemented for transition-age individuals with disabilities.

Second, on the research level, this study would contribute to filling the research gap by explaining the relationship between self-stigma and self-determination and how these impact individuals' motivation, engagement, and transition outcomes. Further, it will serve as a guiding force for prompting subsequent studies that aim to generalize the conceptual framework to those in other developmental phases or with different types of disabilities. Future lines of research can add contextual factors that are conceivably relevant to self-stigma and self-determination (e.g.,

coping skills, social support) and see how these factors are interrelated with the primary psychosocial factors. As the research model culminates in sound research evidence in the future, it would be expected to inform the best evidence-based interventions that can be translated into practice for individuals with disabilities in a transition period (Chan et al., 2009).

On the societal level, this study will introduce a critical lens of disability inclusion by presenting to what extent transition-age individuals with disabilities endorse self-stigma, how that impacts the satisfaction of their basic psychological needs, and how the interaction between these two constructs eventually leads to their goal pursuit in career preparation. Based on the understanding, it will also provide room to think of forms of oppression in society enacted within the ableism framework. Moreover, this study would give an opportunity to dispel common myths about individuals with disabilities (e.g., disability determines individuals; Fine & Asch, 1988) and recognize the wholeness of individuals by understanding their basic psychological needs, self-concept, motivation, and engagement (Berne, 2018).

CHAPTER 2: LITERATURE REVIEW

This chapter provides a summary of literature findings about the variables of the study (i.e., self-stigma, basic psychological needs of self-determination, motivation, engagement, and career outcomes). Also, evidence to support the interconnection among the variables is discussed.

Self-Stigma

The term, stigma, originated from the Greeks, meaning bodily signs that show unusual and bad moral attributes of individuals (e.g., a slave, criminal, or traitor). These signs had been used in excluding and segregating those people (Goffman, 2005). These stigmas are typically formed in the context of social and cultural interactions in a particular era, meaning that the subject of stigma varies depending on the context where and when it is used (Goffman, 2005; Link & Phelan, 2001). Over the past few decades, stigma-related research has been burgeoning in different academic disciplines including psychology, sociology, anthropology, and rehabilitation counseling (Link & Phelan, 2001), and these initiatives allowed an advanced and in-depth understanding of the concept.

The concept of stigma is understood as a multilevel concept that entails public, structural, and self-stigma (Ditchman et al., 2013; Vogel et al., 2013). Public stigma refers to the process by which the general population acknowledges and accepts stereotypes and prejudices toward a certain group of the population. This becomes significantly problematic when these widely prevalent perceptions are shown through discriminatory actions toward the population (Corrigan, 2004; Vogel et al., 2013). Another type of stigma is called structural stigma, and it entails sociopolitical forces (e.g., policies and laws) that restrict the social integration of stigmatized groups (Corrigan et al., 2005; Hatzenbuehler & Link, 2014; Link & Phelan, 2001). Lastly, stigmatized individuals may become aware of those public stigmas, concur with them, and apply

them, leading to endorsing stigma as one of their self-concepts (i.e., self-stigma; Corrigan et al., 2009; Corrigan et al., 2016).

Individuals with disabilities are often at a high risk of being impacted by self-stigma. The negative impact of self-stigma for individuals with disabilities has been well-documented; first, the basic physical needs of humans such as health, housing, and finance may be thwarted by a high level of self-stigma (Ahern et al., 2007; Rosenfield & Neese-Todd, 1993); on a psychological aspect of life, individuals with high self-stigma are likely to experience reduced autonomy, self-esteem, self-efficacy and quality of life (Caqueo-Urizar et al., 2020; Corrigan et al., 2009; Chan et al., 2017; Hamann et al., 2017); lastly, individuals' social lives could be negatively impacted shown by less help-seeking and goal-pursuit behaviors and social integration (Corrigan et al., 2009; Livingston & Boyd, 2010; Mackenzie et al., 2019a).

Specifically, the negative impact of self-stigma on adolescents or young adults was examined. First, individuals' academic performance was found to be impacted by self-perceived and self-adopted stigma, observed by students' low GPA (Brown & Lee, 2005), disengaged academic behaviors (Pinel et al., 2005), and decreased self-esteem and self-efficacy (Pinel et al., 2005). Specifically, Steele (1992) elaborated that some individuals disidentify with achievement outcomes intentionally to avoid confirmation of negative stereotypes from the public and society, leading to academic demotivation and underestimation of their capacities. Second, the relationship between self-stigma and individuals' engagement in social and co-curricular activities was observed. College students with psychiatric disabilities who have a high level of self-stigma are less likely to receive social support (Denenny et al., 2015). Also, Ludwikowski et al. (2009) found a negative association between self-stigma and attitude toward career counseling-seeking behaviors.

These empirical findings can be supported in light of the stigma-related theoretical framework such as Modified Labeling Theory (Link et al., 1989) and the Why Try model (Corrigan et al., 2009). Although their theoretical emphases are slightly different, these frameworks are similar in that both discuss multiple mediators and moderators that are located on a continuum of self-stigma and its consequences. For example, Modified Labeling Theory espouses that individuals who endorsed a label are likely to respond to it in certain ways such as secrecy or withdrawal which would cause negative consequences such as decreased self-esteem, loss of power, or constrained social network ties. Similarly, in the Why Try model, self-stigma impacts individuals' self-esteem and self-efficacy, leading to their less goal-pursuit behaviors (Corrigan et al., 2009). However, one major shortcoming of both theories is that they were built upon the subject of psychiatric disabilities (Corrigan et al., 2016; Ditchman et al., 2013; Glass et al., 2013; Kroska & Harkness, 2006; Pasman, 2011), and a lack of research initiative was placed on applying the theory to a different population, such as transition-age individuals with disabilities. Besides, previous studies built on these frameworks have been more directed toward the aim of exploring the impact of stigma on individuals' psychosocial (e.g., lower level of social support and self-respect; Corrigan et al., 2016; Glass et al., 2013) and behavioral outcomes (e.g., less engagement in help-seeking behaviors); the studies concerning career outcomes fell short.

Self-Determination

The Self-Determination Theory (SDT) has been applied in various research areas such as education, business, and healthcare for the population of students (Deci & Ryan, 2016), teachers (Eyal & Roth, 2011), employees (Gagné & Deci, 2005), patients (Ng et al., 2012), and clients (Markland et al., 2005). Disability studies are also one such area where the theory can be linked to the population of interest, individuals with disabilities. Specifically, the theory was found to

serve as the best practice for people with disabilities when they are in the crucial developmental phase of developing and determining their careers (Super, 1990; Wehmeyer & Powers, 2007; Wehmeyer & Schwartz, 1998).

The term *self-determination* is defined as self-governance with any self-empowering actions in a person's life (Wehmeyer & Schwartz, 1998). Many researchers, practitioners, families, and other stakeholders involved in transition services for individuals with disabilities have concurred that self-determination is a key element to support a successful transition to adult life (Wehmeyer & Schwartz, 1998). The SDT theory consists of five sub-theories and among them, the current study focused on the basic psychological needs and goal contents theories (Reeve, 2012). The basic psychological needs of self-determination consist of autonomy, competence, and relatedness that serve as resources for inherently motivated and self-determined actions and strategies for shaping contextual resources to enhance the potential of meeting these needs (Deci & Ryan, 2008; Reeve, 2012; Ryan & Deci, 2000). Goal contents theory differentiates intrinsic and extrinsic motivation (**Figure 2.1**) and explains how shaping an internalized value and endorsing interest and enjoyment of the action are ideal and desirable over instilling extrinsic motivation (Reeve, 2012; Ryan & Deci, 2000).

Basic Psychological Needs of Self-Determination

One of the primary constructs of interest in the current study is three basic psychological needs (i.e., autonomy, competence, and relatedness; Ryan & Deci, 2001). These basic needs are regarded as the nutrients of individuals' inherent and proactive motivation for growth as well as personal well-being (Ryan & Deci, 2001; Ryan, 2009). Thus, when these needs are thwarted, individuals may be likely to experience decreased inherent motivation and increased ill-being

whereas when these are satisfied, individuals may be likely to experience a sense of integrity and well-being in their lives (Ryan, 2009; Ryan & Deci, 2000).

First, autonomy refers to a psychological need to act based on inner endorsement and ownership of the behavior (Deci & Ryan, 2000; Ryan & Deci, 2006). The failure to fulfill autonomy may cause one to feel regulated by an external force (Deci & Ryan, 1985). In discussing the conditions that provoke/thwart individuals' autonomy, researchers mentioned that the perceived locus of causality for a certain behavior is key to determining individuals' autonomous status (deCharms & Muir, 1978; Lepper et al., 1973). In other words, when extrinsic rewards (e.g., monetary rewards) or regulations (e.g., surveillance, evaluation) are introduced for a certain activity/behavior, people could feel that the locus of control is located on the external side, leading those to feel less autonomous and internally motivated (Deci et al., 1999; Harackiewicz et al., 1984; Lepper & Greene, 1975). Moreover, those who feel the external locus of control are likely to experience less goal-conducive behaviors via decreased engagement in creativity and problem-solving (Deci & Ryan, 1980; 2000). Thus, an environment where decision-making and self-direction are allowed without the influence of external factors is necessary to enhance individuals' fulfillment of autonomy and internal motivation (Ryan & Deci, 2000).

Second, competence is a psychological need to realize one's capabilities to produce desired outcomes (Ryan, 1995). When the need fails to be satisfied, it may lead to feelings of inadequacy and suspicion about one's capacities (Chen et al., 2015). The feeling of competence is likely to occur when the following prerequisites are met; (a) optimal challenges are given; (b) positive feedback is provided; (c) an environment that respects one's autonomy is warranted (Deci & Ryan, 2000; Ryan, 1995). With regard to (a) condition, Bandura's self-efficacy theory

validated the importance of optimally challenging tasks instead of easy success experience, explaining that overcoming difficulties and persevering them would help individuals learn how to rebound from obstacles and build resilient competency (Bandura, 1994). During the process, positive feedback should be given that often accompanies constructive criticism to help individuals master skills (Niemiec & Ryan, 2009). More importantly, these conditions are best met when individuals feel autonomous and responsible for their behaviors (Deci & Ryan, 2000).

Lastly, relatedness refers to the feeling of attachment and intimacy with others (Ryan, 1995). When it fails to be met, individuals are likely to feel isolation and loneliness (Chen et al., 2015). Although the need for relatedness has been perceived as a distal factor for individuals' internal motivation and well-being, compared to the need for autonomy and competence, it has been found that having a secure attachment to significant others is equally crucial for individuals to maintain an inherent motivation (Deci & Ryan, 2000; Ryan, 1995). This was also evident in early childhood attachment-related studies, showing that children with secure and safe attachments tend to engage in exploratory behaviors and environmental adaptation whereas those with less healthy attachment with their caregivers are at risk of experiencing social withdrawal or negative psychosocial outcomes (Bowlby, 1979; Hazen & Durrett, 1982; Hong & Park, 2012). Moreover, the positive attachment in an early developmental stage is likely to remain during an individual's later developmental tasks. Having secure attachment was associated with a person's high motivation for achievement, mastery-approach goals, and low anxiety for failure (Elliot & Reis, 2003). However, not all internally motivated behaviors are implemented in an environment where relatedness is satisfied; it may sometimes be realized in an isolated environment (Deci & Ryan, 2000; Ryan & Deci, 2001). Nonetheless, even when people are in an isolated environment, having stable and secure relational support still matters in taking autonomous actions (Deci &

Ryan, 2000; Ryan & Deci, 2001). In other words, being autonomous does not mean getting detached from others; rather, it means that people like to depend on each other who can respect their autonomy (Deci & Ryan, 2000; Ryan & Deci, 2006).

With regard to the connection between self-stigma and the basic needs of self-determination, there has been a lack of studies that thoroughly review the relationship between these two concepts. Based on the premises of these two concepts and the compilation of fragmented research findings, they can be justified to be interrelated. For the relationship between self-stigma and autonomy, individuals who endorse and apply stigma may be likely to be put in a situation where the locus of control resides outside. Within this environment, individuals may be demoralized in engaging in participative and critical behavior; the ownership of decisions might be taken over by other decision-making authorities (Cavelti et al., 2012; Hamann et al., 2017). Besides, when stigmatized individuals continue to have a belief in others' continuous discriminatory behaviors, it may lead people to use less self-directed coping behaviors such as denial, avoidance, and wishful thinking, reinforcing external attribution (Miller & Kaiser, 2001) and less engaging behaviors for desirable outcomes (e.g., hope, empowerment, goal-pursuit behaviors, treatment adherence; Corrigan et al., 2009; Livingston & Boyd, 2010).

The relationship between self-stigma and competence can be understood by the impact of stigma on individuals' self-efficacy. In short, self-stigma is likely to result in a low level of self-efficacy (i.e., a person's belief in his/her capacities to produce a desired performance and outcome; Corrigan et al., 2009; Kleim et al., 2008; Rose et al., 2019; Vauth et al., 2007). Also, self-stigma can disrupt the necessary conditions for building competence - (a) optimal challenges are not likely given; (b) positive feedback may not be provided; (c) an environment that disrespects one's autonomy may be given. First, those with disabilities can be easily perceived as

being incapable of performing desired tasks and often become subject to exclusion from optimal challenges (Groce, 2004; Konrad et al., 2013). That also means that they have been deprived of the opportunities to receive positive and constructive feedback on what they did/can do. Lastly, the environment that makes individuals feel locus of control outside is likely to be constituted as a barrier for individuals building competency for their valued activities.

With regard to the relationship between self-stigma and positive relationship-building, individuals with disabilities are likely to be in a vulnerable position to experience negative intrapersonal reactions such as isolation, rejection, and loneliness (Jahoda & Markova, 2004; Petrovski & Gleeson, 1997) and interpersonal conflicts (e.g., hostility, conflict with others; Larkin et al., 2012; Li, 2004), which might have impacted individuals' satisfaction of relatedness need. The difficulty of relationship building also could have been attributed to individuals' early stages of attachment building with parents/caregivers. For example, children with disabilities may face challenges in developing initial attachments with parents/caregivers especially when parents/caregivers feel a high level of affiliate stigma and the subjective burden of caregiving (Mak & Cheung, 2008). Green (2004) reported that mothers often consider the residential placement of their children when they feel stigmatized, which might have deprived children of opportunities to form positive relationships with their caregivers at an early age.

In contrast, the satisfaction of these three basic needs is positively associated with autonomous and intrinsically motivated behaviors, through which positive life outcomes are likely to be brought. For example, those with a high level of self-determination were likely to experience academic success (Jameson, 2007; Zheng et al., 2014), employment and community engagement (Shogren et al., 2015; Wehmeyer & Palmer, 2003; Wehmeyer & Schuwartz, 1997), independent living (Wehmeyer & Palmer, 2003), and high quality of life (Wehmeyer &

Schwartz, 1998; Lachapelle et al., 2005). In addition to self-informants' reports, family/caregivers and teachers also agreed that individuals with disabilities who are self-determined are likely to be skilled in self-governing actions, including decision-making, problem-solving, and self-advocacy (Grigal et al., 2003).

Motivation

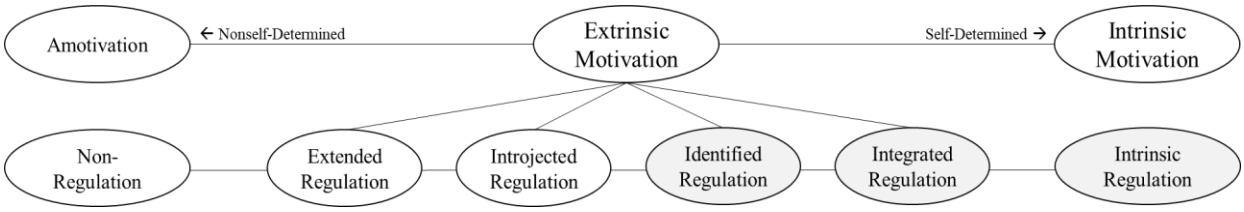
A wealth of theories and research about motivation explain its primary attribute that it determines the direction, magnitude of energy, and persistence of individuals' behavior (Ryan & Deci, 2000; Dörnyei & Ushioda, 2011). Due to this characteristic of serving as a proxy of an individual's behavior, motivation has received substantial attention in different academic disciplines such as education and counseling that value individuals' intrinsically motivated behaviors. SDT argues that there exist three types of motivation; first, amotivation refers to the state of lacking the incentive to act; second, intrinsic motivation involves a status of one's behaviors determined by internal satisfaction and enjoyment; lastly, extrinsic motivation refers to the status of one's behavior urged by external regulation (Ryan & Deci, 2000). The way individuals are motivated (i.e., intrinsically or extrinsically) is critical in determining individuals' persistence and direction of behavior. Individuals who are intrinsically motivated were likely to show greater need satisfaction and well-being (Niemiec et al., 2009), whereas those who were extrinsically motivated tended to show low self-actualization and self-esteem, and poor mental health (e.g., anxiety, depression, and narcissism; Kasser & Ryan, 1996). In addition, as regards job performance, individuals with intrinsic motivation were likely to show more flexibility and less turnover intention in work settings (Van Den Broeck et al., 2009; Vansteenkiste et al., 2007).

While acknowledging the benefits of intrinsically motivated behaviors, Ryan and Deci (2000) understood that not all human behaviors are made to be internally motivated; rather it is

natural that their behaviors are promoted by the mixture of these two with varying degrees. With this assumption, SDT theory anticipated that there are four types of extrinsic motivation that determine the extent to which the internal locus of causality is endorsed. The type of motivation that has the least component of autonomy and is located on the far left (see **Figure 2.1**) is referred to as *external regulation*. Behaviors motivated by external regulation are instantiated to either earn external rewards or avoid punishment (Deci & Ryan, 2000). This was the basic premise of Skinner's operant theory, suggesting that individuals' behaviors are regulated by external contingency (Skinner, 1953). If those external components are withdrawn, people are less likely to maintain or transfer those behaviors (Deci & Ryan, 2000). A second type of external motivation called *introjected regulation* is similar to external regulation, but it is unique in terms that it is related with the ego (Deci & Ryan, 2000; Ryan & Connell, 1989). Individuals with introjected regulation take action due to pride, guilt, or shame (Ryan & Deci, 2000). A more autonomous type of extrinsic motivation is referred to as *identified regulation*. Those who are regulated by identified regulation tend to behave upon the endorsed value of a target behavior (Ryan & Deci, 2000). Still, it belongs to extrinsic motivation because the behavior is prompted by instrumental purpose rather than enjoyment or internal satisfaction (Deci & Ryan, 2000). Lastly, the most autonomous type of extrinsic motivation is referred to as *integrated regulation*. This can occur when individuals are brought into congruence with the values and synthesize these to their self-identity (Deci & Ryan, 2000; Pelletier et al., 1997). The current study will discuss the aggregation of identified regulation and intrinsic motivation to describe individuals' intrinsic motivation status (Gagné et al., 2015).

Figure 2.1

Types of Motivation



Note. Shaded circles were operationalized as intrinsic work motivation.

It appears evident that a fully or somewhat internalized motivation is essential in bringing in goal-engaging behaviors and ultimately successful goal achievement. The question can then become how individuals can have the ideal or close to an ideal form of motivation. Researchers initially built a basis that the degree to which people come to have internalized motivation is a function of how basic psychological needs (i.e., autonomy, competence, and relatedness) are satisfied (Deci & Ryan, 2000). First, individuals need to endorse the internal locus of control for their course of actions (i.e., autonomy) instead of over-relying on contingencies of external reward and punishment (e.g., approval motive, conditioned self-esteem, avoidance of guilt/shame; Deci & Ryan, 2008). Although it is presumably understood that if individuals have yet to form genuine excitement and satisfaction for the work, an external factor can serve as a driving force to initiate a behavior (Gagné & Deci, 2005), the ultimate transference from external to internal motivation should be pursued because the consequences of autonomous and external motivation are likely to differ in the end; autonomous motivation contributes to better performance outcomes, long-term persistence, and greater psychological health that are not readily realized with external motivation (Deci & Ryan, 2008).

Competence constitutes another nutriment of intrinsic motivation. When individuals have a belief that they have the capability of taking an action of interest to achieve desired outcomes,

they tend to internalize the values and regulations of the activity/behavior (Gagné & Deci, 2005). This has been demonstrated by a similar concept known as self-efficacy in that it serves to be a contributing agent for individuals' intrinsic interest, deep engagement, strong commitment, and enhanced well-being (Bandura, 1994). Lastly, relatedness plays a critical role in infusing intrinsic motivation in people. This need can be satisfied by having secure attachments with others and caring social networks, and if the need is met, it would affect the extent to which individuals are self-determined and intrinsically motivated (Deci & Ryan, 2000). Although all three basic needs are crucial for enhancing intrinsically motivated behaviors, it has been concluded that autonomy plays a key role; competence and relatedness may flourish the best when these are built upon a sense of autonomy (Ryan & Deci, 2000).

Additionally, it should not be overlooked that there may exist individual differences shaped by their own social and cultural learning. One of the dimensions is concerned with where individuals' long-term aspirations are directed toward. Two general directions of aspirations – intrinsic and extrinsic – exist (Kasser & Ryan, 1996). If individuals' norms and values are shaped within a culture where extrinsic aspirations are central, they may be more likely to pursue such goals that may bring them external contingencies such as wealth and fame (Deci & Ryan, 2012). On the contrary, if individuals are influenced by an environment where personal development and goal attainment are more valued, those individuals' goal orientations are likely to be centered on intrinsic incentives such as excitement, fulfillment, and meaningfulness (Deci & Ryan, 2008; Deci & Ryan, 2012). Given the fact that the direction of goal pursuit is acquired by social/cultural learning, it can be assumed that individuals' perceptions of societal/cultural expectations would play a huge role in orienting themselves to a desired point on the continuum of intrinsic and extrinsic aspirations. Individual differences in basic psychological needs

satisfaction and its association with goal-pursuits called our attention to the need to understand how this may be operated for individuals with disabilities.

Engagement

Whereas motivation is a private and unobservable construct that guides and determines individuals' actions and persistence, engagement is an observable construct consisting of internal (i.e., cognitive and emotional) and external (i.e., behavioral and agentic) components (Reeve, 2012). Motivation is often positioned as a cause of engagement, assuming that it gives individuals internal forces, which are instantiated by objectively observed actions/inactions (Reeve, 2012; Skinner et al., 2009). In other words, individuals who are highly motivated are likely to show an active level of engagement in various ways: emotional engagement such as excitement and satisfaction; cognitive engagement such as attention and intention to step further beyond what is required; behavioral and agentic engagement such as persistence and perseverance even in the face of barriers; (Skinner et al., 2009). Conversely, those who lack motivation tend to show less engagement seen as alienation, apathy, disaffection, withdrawal, and avoidance (Skinner et al., 2009).

The association between individuals' high engagement and positive outcomes was well-supported by its theoretical definition and empirical research findings. First, engagement is described as individuals' psychological investment in the mastery of a skill and craft beyond just performing rituals and routine tasks (Newman et al., 1992). Thus, it can be conceived that the more individuals are directed toward efforts and psychological investment in the mastery of knowledge and skillset of interest, the more self-realizing outcomes are likely to be brought in. The previous empirical findings also validated the relationship; for example, individuals who showed high engagement were likely to take presumable actions that are associated with goal

pursuits including trying out something new and meeting new people (Finn & Zimmer, 2012), leading to positive life outcomes (e.g., less dropout, academic achievement; Reeve & Tseng, 2011; Rumberger & Rotermund, 2012), whereas those with low engagement were associated with poor outcomes such as decreased GPA and educational aspirations (Wang & Eccles, 2012). In addition, highly engaging behaviors could impact others' behaviors. For example, when students/employees showed active engaging behaviors, teachers/supervisors subsequently displayed a more autonomy-supportive teaching/supervision style; in contrast, teachers/supervisors reacted with a more controlling style in correspondence to individuals' disengaging behaviors (Pelletier et al., 2002; Skinner & Belmont, 1993).

Given the positive outcomes that can be derived from a high level of motivation and engagement, understanding the conditions that facilitate or impede individuals' motivation and engagement is crucial. One way to influence one's motivation and engagement is through the satisfaction of basic psychological needs (i.e., autonomy, competence, and relatedness) as indicated earlier. For example, it has been said that authentic and autonomous work, competency, and school memberships are three primary building blocks for facilitating academic engagement among students (Newman et al., 1992). When it comes to vocational behavior, a positive association between self-determination and work engagement was observed; individuals who are well-satisfied with the basic needs of autonomy, competence, and relatedness are more likely to experience high work engagement (Bakker & Oerlemans, 2019; Scharp et al., 2022). In addition, autonomy-satisfied motivation may mitigate the impact of job stressors on workload. This is because employees with high autonomy tend to take the initiative in changing work stressors (i.e., high demand and low resources), which may lead them to be less vulnerable to

environmental strains and better adapt to job stressors (Fernet et al., 2004; Fernet & Austin, 2014).

Another factor pertaining to motivation and engagement is individuals' self-stigma. For example, people with high self-stigma are less likely to be involved in adaptive engagement behavior such as treatment seeking; rather they may be involved in maladaptive engagement behaviors such as being defensive and isolated (Lannin et al., 2016; Hammarlund et al., 2018; Watson et al, 2007). Also, self-stigma often shifts/lowers the directions or magnitudes of self-beliefs in their capabilities, demoralizing individuals from goal-seeking behaviors (Corrigan et al., 2006; 2009). Further, the research results that self-stigma reduction interventions were found to be effective in promoting individuals' readiness for change and improved psychosocial functioning indicate that self-stigma is associated with individuals' motivation and engagement (Fung et al., 2011; Lucksted et al., 2011; McCay et al., 2007).

Career Outcomes for Individuals with Disabilities

Gaining competitive and integrative employment brings benefits to individuals' financial (e.g., self-sustaining finance sources), psychological (e.g., positive mental health, self-confidence, self-identity, quality of life) and social lives (e.g., social inclusion, recognition, belongingness; Evans & Repper, 2000; Cocks et al., 2015; Roux et al., 2013; Saunders & Nedelec, 2014; Vornholt et al., 2018), whereas unemployment often causes harm in life outcomes such as poverty, morbidity, mortality, depression, and suicide (Evans & Repper, 2000; Cocks & Lee, 2015; Saunders & Nedelec, 2014; Waddell & Burton, 2006). Unfortunately, these benefits are not easily realized for every individual; additional challenges exist for individuals with disabilities. Indeed, the employment rate of individuals with disabilities lags behind that of counterparts without disabilities (i.e., 19.1 and 63.7% for persons with and without a disability,

respectively; U.S. Department of Labor, 2023). Similarly, young adults with disabilities often encounter bleak employment outcomes (i.e., significantly underpaid; $9.40 and $13.20/hour for those with and without disabilities, respectively; Sanford et al., 2011).

In addition, young adults with disabilities are less likely to enroll in post-secondary education than those without disabilities (i.e., 39.0 and 60.0% for those with and without a disability, respectively; Sanford et al., 2011), and thus, the benefits of fulfilling post-secondary education have been less realized for the population. These benefits include better earnings, lower incidence of poverty, increased health behaviors, and improved quality of life (Trostel, 2015). Moreover, there exist the spillover effects of individuals fulfilling post-secondary education on society; for example, those with college attendance have a 12.48 times higher value of average lifetime federal income tax than those without college attendance ($549,000 and $44,000, respectively; Trostel, 2015) and are less likely to rely on public assistance (e.g., Medicaid, housing subsidy, supplemental nutritional assistance program) than the counterpart without post-secondary education ($14,480 and $95,454, respectively; Trostel, 2015). Not only in monetary terms but also advanced education is likely to be translated into active community engagement such as voter turnout, volunteer, and charitable contributions (Milligan et al., 2004; Hout. 2012; Trostel, 2015).

As transitioning to employment or advanced education appears to have recognizable benefits for those with disabilities, there have been research efforts to understand protective and challenging factors that facilitate and impede transition outcomes. The common predictors include personal factors such as general health, independence of daily living, self-advocacy, autonomy, IEP involvement, employment-related skillsets (e.g., career awareness, communication abilities, computer skills, and driving), assistive technology usage and previous

working experience (Burgstahler, 2003; Carter et al., 2010; Fabian, 2007; Roux et al., 2013; Shogren & Shaw., 2016; Wehman et al., 2015). On an environmental level, social support (e.g., parent expectations for employment; Cmar et al., 2018; Wehman et al., 2015), customized service provision (e.g., job placement, vocational educational services, employer training; Benz et al., 2000; Cmar et al., 2018; Fabian, 2007; Migliore et al., 2012), and disability-inclusive societal climate for individuals with disabilities (Fabian & Pebdani, 2013; Lindsay et al., 2015; Pandey & Agarwal, 2013) were reported as significantly impacting factors. Among these different factors impacting transition outcomes, the current study set a line of inquiry into individuals' psychological factors such as self-stigma and self-determination.

Regarding the relationship between self-stigma and career outcome (i.e., pursuing employment and an advanced level of education), several research findings agreed on the negative association between these two. For example, Hielscher & Waghorn (2017) found that self-stigma was positively associated with employment fear; individuals with high self-stigma tend to less engage in employment-seeking behaviors due to their concerns about disclosing their disabilities. Brohan et al. (2010) and Vrbova et al. (2016) also found an association between self-stigma and career outcomes, suggesting that individuals who are employed tend to have lower self-stigma. As regards the relationship between self-stigma and advanced education pursuit, Kamaradova et al. (2016) and Lv et al. (2013) found a negative link between self-stigma and education level, which indicates that individuals with self-stigma are less likely to pursue an advanced education. Although these relationships intuitively may register, theoretical frameworks such as the *Modified Labeling Theory* (Link et al., 1989) and the *Why Try* model (Corrigan et al., 2009) could assist in supporting explanations. For example, according to *Modified Labeling Theory*, individuals with high self-stigma may be likely to engage in

maladaptive coping (e.g., secrecy and withdrawal) to deal with the publicly available stigmas, resulting in decreased psychosocial functioning (e.g., lowered self-esteem, restricted social networks) and less interest in future career planning. According to the *Why Try* model, individuals with high self-stigma may feel hopelessness and futility in preparing for career advancement.

Another relationship of interest in the current study lies in the link between self-determination and career outcome. Self-determination has served as an important topic in the realm of transition services for individuals with disabilities since the late 20th century, suggesting that self-directions, decision-making, and assuming responsibility for their own lives are key to a successful transition to adult life (Wehmeyer & Schwartz, 1998). This conceptual framework has been also validated by empirical findings. For example, Wehmeyer & Schwartz's (1998) initial research initiative to identify the relationship between these variables tracked adult outcomes for students with disabilities 1 year after graduation and found that students with a higher level of self-determination were likely to produce positive adult outcomes such as employment with a higher rate of wage than less self-determined individuals. The following studies echoed the finding of a positive association between self-determination and active engagement in career planning by showing that self-determined individuals are more likely to obtain job benefits and health insurance than less self-determined counterparts (Field et al., 2003; Shogren et al., 2015; Wehmeyer & Palmer, 2003).

The acknowledged importance of self-determination provided an impetus to develop intervention strategies for individuals with disabilities to endorse self-empowerment and improve self-governing skills. According to a meta-analysis of self-determination intervention for individuals with disabilities, an averagely moderate gain was observed across interventions in

improving self-determination (Algozzine et al., 2001), and some of the intervention studies went further to show generalized effects in help-seeking (Balcazar et al., 1991), self-directed leisure activity decision (Bambara & Ager, 1992; Schleien & Larson, 1986), active participation in individualized education programs (Van Reusen & Bos, 1994), and work adjustment (Roffman et al., 1994). Specifically, for individuals in a transition period, significant gains were observed in positive transition outcomes such as increased transition knowledge, completion of high school, and improved independent living skills (Powers et al., 2012; Seong et al., 2015; Wehmeyer et al., 2011).

With regard to career outcomes, the current study used two types of measures—observable outcomes and perception-based outcomes—to balance individuals' actual career status and self-beliefs around it. As regards observable outcomes, whether individuals have had work experience, the number of interviews participants have had for job/advanced education, and the wage of the current/past job the participants have had were asked. Several studies used similar questions to understand participants' actual career engagement; for example, Smith et al. (2015) asked how many job/volunteer interviews participants have completed; National Longitudinal Transition Study- 2 (NLTS2) also used such actual observable outcome-based questions to understand students' career status (e.g., have you had any paid jobs during the past 2 years other than work around the house?). In addition to observable outcome measures, individuals' perceptions regarding their career achievability were measured to understand to what extent they believe they can gain employment or enroll in the advanced education they are pursuing (see Chapter 3 for more information).

While it is evident that improving self-determination skills bears its strong expression in transition services for individuals with disabilities, there has been a dearth of studies that

examined the nutriments for building self-determination such as autonomy, competence, and relatedness; rather most of these studies focused on the observable self-determined skills such as self-regulation, psychological empowerment, and self-realization. Also, its link with self-stigma seldom received research attention despite its presumable interactions. The current research started from the acknowledgment of the limitation of previous literature and aimed to examine the impact of self-stigma and self-determination on career outcomes through intrinsic work motivation and career engagement among transition-age individuals with disabilities.

CHAPTER 3: METHODS

This chapter describes the research design, participant recruitment, study procedures, measures, and data analysis method for the current study.

Research Design

The current study used a cross-sectional survey design to examine the impact of self-stigma and self-determination on career outcomes through intrinsic work motivation and career engagement among transition-age individuals with disabilities. Cross-sectional survey design is widely used in a variety of academic disciplines such as nursing, medicine, and social science to explore the relationship among the variables of interest as well as seek descriptive snapshots of respondents' traits, attitudes, or knowledge (Connelly, 2016; Kesmodel, 2018; Levin, 2006). Conducting a cross-sectional survey has several advantages; first, it can assess different human conditions at once; second, the cost is typically reasonable; third, attrition might be less concerning compared to a longitudinal study; lastly, it might be the only feasible approach when testing a relationship between variables that are not meant to be manipulated (Connelly, 2016). The proposed research model and parameter estimate the current study seeks to explore are described in **Figure 1.1** and **Table 3.1 – 3.2**.

Table 3.1

Estimated Parameter Paths in the Relationship Between Self-Stigma and Intrinsic Work Motivation

	Dependent variable		Intervening variable		Independent variable
1	Autonomy	←	-	←	Self-Stigma
2	Competence	←	-	←	Self-Stigma
3	Relatedness	←	-	←	Self-Stigma
4	Intrinsic Work Motivation	←	-	←	Self-Stigma
5	Intrinsic Work Motivation	←	-	←	Autonomy
6	Intrinsic Work Motivation	←	-	←	Competence
7	Intrinsic Work Motivation	←	-	←	Relatedness
8	Intrinsic Work Motivation	←	Autonomy	←	Self-Stigma
9	Intrinsic Work Motivation	←	Competence	←	Self-Stigma

Table 3.1 (cont'd)

10	Intrinsic Work Motivation	←	Relatedness	←	Self-Stigma

Table 3.2

Estimated Parameter Paths in the Relationship Between Intrinsic Work Motivation and Career Outcomes

	Dependent variable		Intervening variable		Independent variable
1	Career Engagement	←	-	←	Intrinsic Work Motivation
2	Work Experience	←	-	←	Intrinsic Work Motivation
3	Work Experience	←	-	←	Career Engagement
4	Number of Interviews	←	-	←	Intrinsic Work Motivation
5	Number of Interviews	←	-	←	Career Engagement
6	Hourly Wage	←	-	←	Intrinsic Work Motivation
7	Hourly Wage	←	-	←	Career Engagement
8	Employment Achievability	←	-	←	Intrinsic Work Motivation
9	Employment Achievability	←	-	←	Career Engagement
10	Education Achievability	←	-	←	Intrinsic Work Motivation
11	Education Achievability	←	-	←	Career Engagement
12	Work Experience	←	Career Engagement	←	Intrinsic Work Motivation
13	Number of Interviews	←	Career Engagement	←	Intrinsic Work Motivation
14	Hourly Wage	←	Career Engagement	←	Intrinsic Work Motivation
15	Employment Achievability	←	Career Engagement	←	Intrinsic Work Motivation
16	Education Achievability	←	Career Engagement	←	Intrinsic Work Motivation

Participants

This study recruited participants in the U.S. using nonprobability sampling techniques such as convenience and snowballing sampling. Although it is undoubtful that probability sampling (e.g., random or stratified sampling) is the ideal form of sampling strategy, it may not be an optimal choice when there is a finite population and it is unrealistic to randomly select the sample (Etikan et al., 2016; Sharma, 2017). The inclusion criteria for the sample are as follows: (a) individuals with disabilities; (b) those in a transition period from school/outside of school to work or more advanced education (e.g., secondary education to work, secondary education to college/university, college/university to work/graduate school, outside of school to work/education). The exclusion criteria for the sample are as follows: (a) individuals without disabilities; (b) those who are not in a transition period from school/outside of school to work or

more advanced education. A total of 196 individuals with disabilities were included. This is slightly below the median sample size in structural equation modeling (SEM) in the field of education and social science (i.e., 200; MacCallum & Austin, 2000). A priori power analysis for SEM via R 4.3.2 confirmed that this would be enough sample size to achieve 80% power with a .05 alpha level and an acceptable model fit (RMSEA value under .07; Jak et al., 2021). The demographic characteristics of participants are described in **Table 3.3**.

Table 3.3

*Demographics of Participants (*N *= 196)*

	N (%)
Age	
14-17	3 (1.5)
18-26	181 (92.3)
27 or over	12 (6.1)
Gender	
Male	22 (11.2)
Female	152 (77.6)
Non-binary/prefer not to respond	20 (11.2)
Race/Ethnicity	
White	143 (73.0)
Non-White (Black/African American, Hispanic/Latino, Asian)	32 (16.3)
Multi-race	21 (10.7)
School Year	
High school/post-secondary education (no degree)	22 (11.2)
College/university or above	174 (88.8)
Disability Type[a]	
Learning disability	31 (15.8)
Developmental disability	97 (49.5)
Psychiatric disability	99 (50.5)
Sensory/physical/chronic disability	76 (38.8)

Note. [a]There were a total of 76 participants who reported multiple disabilities; developmental disability includes attention deficit and hyperactivity disorder (ADHD) and autism spectrum disorder (ASD).

Sample Size

Having an adequate number of samples is important in SEM (Gallagher et al., 2008). There are multiple guidelines available regarding what is considered an adequate sample size. Kline (2005) suggested using at least 200 people; Jackson (2003) used n:*q* rules of thumb where *q* is the number of parameters in the model and 10-20 samples are recommended per each parameter; Jackson et al. (2013) discussed the need of considering the number of latent variables and measured variables on each latent variable, factor loading, and how reliable and valid the measures are. Keeping guidelines in mind, the researcher conducted an a priori power analysis for SEM via R 4.2.3 to calculate the ideal sample size, after which the median sample size (i.e., 200) was found to be reasonable to achieve 0.8 power with .05 alpha level and an acceptable RMSEA model fit (Jak et al., 2021). The current study included a total of 196 participants.

Procedures

Survey Development

A total of 51 questions were used in the survey consisting of existing measures (i.e., Self-Stigma Scale-Short Form, Basic Psychological Need Satisfaction and Frustration Scale, Multidimensional Work Motivation Scale, Career Engagement Scale, Adapted Career Achievability Scale) and researcher-developed measures (i.e., demographic and observable career outcome measures). Due to the lack of an existing measure to assess observable career outcomes, the researcher developed a measure consisting of three items based on previous studies. For the researcher-developed measures, the researchers used universal languages that are easily understood by participants, and the developed survey items were reviewed by doctoral-level graduate students.

Recruitment

After obtaining MSU's Institutional Research Board (IRB) approval (see **Appendix A**), participants were recruited by contacting three groups of professionals – (a) rehabilitation counselors at public/private rehabilitation agencies; (b) special education teachers; (c) disability specialists/counselors at colleges/universities across the country – and by the researcher's visiting different undergraduate/graduate classes in the University the researcher attends to recruit participants. When making contact, the flyer consisting of research details (e.g., purpose, participant eligibility, benefits and costs of participation, compensation, contact information, IRB approval information; see **Appendix B**) and the Qualtrics survey link were disseminated together. If participants were under 18, their assent and the consent of their parent or legal guardian were required. If participants were equal to or above 18, their consent was required.

Data Collection

Participants were able to access the survey link or QR code in the flyer to take part in the survey in which they were asked to read the informed consent consisting of a summary of the research, benefits/risks, confidentiality, rights to participate or withdraw, cost and compensation, and contact information and check a mark to indicate they want to participate in the study (see **Appendix C**). In addition, as a part of the snowball sampling, participants were encouraged to pass along the survey information to their acquaintances who might be eligible for the study. Despite the possibility of sampling error, snowball sampling could be a viable option especially when the population is not easily accessible (Sharma, 2017). Also, flyers were hung up on the wall of public spaces where the flow of eligible individuals was expected such as the disability office center at universities.

The privacy of participants was protected by (a) keeping the survey anonymous and (b) separating individual-identifiable information (i.e., email address for receiving an incentive) from the responses to the survey (see **Appendix F**). The confidentiality of data was secured by (a) storing survey records in a researcher's password-protected computer which only the researcher was able to access and (b) discarding raw data 3 years after the completion of the research. The survey was reviewed by the chair of the dissertation committee and fellow doctoral students during 2023 Summer, after which editing was followed. The average completion time of the survey was 15-20 minutes. A couple of months after a survey was completed and submitted, a $10 Amazon gift card was provided to participants as a token of appreciation.

Measures

Demographic Questionnaire

The demographic questionnaire was developed by the researcher consisting of age, gender, race/ethnicity, education level, major if applicable, and disability types. The measure is included in **Appendix G**, section 1.

Self-Stigma

Self-stigma was measured by the *Self-Stigma Scale – Short Form* (Mak & Cheung, 2010). It consists of nine questions assessing cognitive, affective, and behavioral dimensions of self-stigma. The measure was examined for immigrant women and mental health consumers. The sample items are: "*My identity as a _____ is a burden to me*." (Cognitive); "*I feel uncomfortable because I am a _____*." (Affective); "*I estrange myself from others because I am a _____*." (Behavioral). The current study filled the blank with "a person with disability". Participants were asked to indicate the extent to which they agree with the statement on a 4-point Likert-type scale (1 = *Strongly disagree*, 2 = *Disagree*, 3 = *Agree*, 4 = *Strongly agree*).

Cronbach's alpha for each dimension is as follows: cognitive (Cronbach's alpha = .67, .81 for immigrant women and mental health consumers, respectively); affective (Cronbach's alpha = .66, .84 for immigrant women and mental health consumers, respectively); behavioral (Cronbach's alpha = .70, .80 for immigrant women and mental health consumers, respectively). The overall Cronbach's alpha was .84 and .91 for immigrant women and mental health consumers, respectively. The Cronbach's alpha for the current sample was .74, .59, and .85 for cognitive, affective, and behavioral factors, respectively. The Cronbach's alpha of the whole measure was .83. The convergent validity of the scale is shown by a negative correlation with self-esteem and self-efficacy, and the criterion validity is supported by its significant relationship with depression and anxiety (Mak & Cheung, 2010). The total score ranges from 9 to 36 with the higher the score representing the more severe the self-stigma. This measure is included in **Appendix G**, section 2.

Basic Psychological Needs

The basic psychological needs (i.e., autonomy, competence, and relatedness) were measured by the satisfaction subscales of autonomy, competence, and relatedness in the *Basic Psychological Need Satisfaction and Frustration Scale* (Chen et al., 2015). It consists of four questions for each subscale, resulting in a total of 12 questions. The sample items are: "*I feel a sense of choice and freedom in the things I undertake*." (autonomy), "*I feel confident that I can do things well*." (competence), and "*I feel that the people I care about also care about me*." (relatedness). Participants were asked to indicate the extent to which they agree with the statements on a 5-point Likert-type scale (1 = *Completely untrue*, 2 = *Untrue*, 3 = *Neutral*, 4 = *True*, 5 = *Completely true*). It was developed and tested with the population of four different nations: the U.S., China, Peru, and Belgium. Cronbach's alpha for the satisfaction subscale in the

U.S. population was .81, .88, and .83 for autonomy, competence, and relatedness, respectively (Chen et al., 2015). Cronbach's alphas for the current sample were .75, .85, and .84. The predictive validity was observed by the positive association between need satisfaction and life satisfaction and vitality. The total score of each subscale ranges from 4 to 20 with a higher score representing higher satisfaction with their autonomy, competence or relatedness. This measure is included in **Appendix G**, section 3.

Intrinsic Work Motivation

Intrinsic work motivation was measured by the adapted version of the *Multidimensional Work Motivation Scale* (MWMS; Gagné et al., 2015). Instruction details were edited to make it applicable to the population of the current study. For example, "Why do you or would you put efforts into your *current* job?" was replaced by "Why do you or would you put efforts into your *current/future* job?". The original measure consists of 5 subscales with a total of 19 questions: amotivation, extrinsic regulation, introjected regulation, identified regulation, and intrinsic motivation. For the current study, two subscales (i.e., identified regulation and intrinsic motivation) were used consisting of six items. Previous research supported the use of aggregated subscales of the MWMS (i.e., identified regulation and intrinsic motivation) to measure autonomous motivation (Gagné et al., 2015; Koestner & Losier, 2002). Participants were asked to indicate the extent to which they agree with the statements on a 7-point Likert-type scale (1 = *Not at all*, 2 = *Very little*, 3 = *A little*, 4 = *Moderately*, 5 = *Strongly*, 6 = *Very strongly*, 7 = *Completely*). MWMS was validated in nine countries such as Belgium, Canada, China, France, Indonesia, Norway, Senegal, Switzerland, and the United Kingdom. Cronbach's alphas were .90 and .75 for the subscale of identified regulation and intrinsic motivation, respectively. Cronbach's alphas for the current sample were .89 and .90. The convergent validity of the

measure was demonstrated by its significant correlation with the relevant antecedent (e.g., psychological need for autonomy, competence, and relatedness; .29 - .37) and outcome variables (e.g., vitality, emotional exhaustion; -.40 - .65; Gagné et al., 2015). This measure is included in **Appendix G**, section 4.

Career Engagement

Career engagement was measured by the *Career Engagement Scale* (Hirschi et al., 2014). It consists of nine questions asking about general and specific career engagement behaviors. The sample items include: "*Actively sought to design your professional future"* (General); "*Collecting information about employers, professional development opportunities, or the job market in your desired area"* (Specific). Participants were asked to indicate the extent to which they have engaged in a certain task during the last six months on a 5-point Likert-type scale (1 = *Not much*, 2 = *Little*, 3 = *Somewhat*, 4 = *Much*, 5 = *A great deal*). The total score ranges from 9 to 45 with a higher score representing more engagement in career-seeking behaviors. The scale showed good reliability with Cronbach's alpha being .88. Cronbach's alpha for the current sample was .90. The validity of the measure was demonstrated by its significant association with related variables (i.e., career planning, self-exploration, environmental exploration; Hirschi et al., 2014). This measure is included in **Appendix G**, section 5.

Observable Career Outcome

Observable career outcomes were measured by three items of researcher-developed questions. The survey items were developed based on the NLTS-2 survey and Smith et al. (2015). It asks whether they have had any paid/unpaid jobs during the past 2 years, how many job/volunteer/college/university/post-secondary education program interviews participants

completed, and the hourly wage participants have got for the current/last job (see **Appendix G**, section 6).

Career Achievability

Career achievability was measured by the adapted version of the *Perceived Employability Scale* originally consisting of three items on a 5-point Likert-type scale (1 = *Strong disagreement*, 2 = *Disagreement*, 3 = *Neither agreement nor disagreement*, 4 = *Agreement*, 5 = *Strong agreement*; De Vos & Soens, 2008). The current study added three more items that measure individuals' education achievability. The Cronbach's alpha for the original scale was .91 (De Vos & Soens, 2008). After including three items, Cronbach's alphas for employment and education achievability for the current sample were .80 and .86, respectively. Prior studies have found the measure is related to career insight and career self-management behavior, showing evidence for good construct validity (De Vos & Soens, 2008). This measure is included in **Appendix G**, section 6.

Data Analysis Plan

Preliminary Data Analysis

Before conducting the primary analysis, the Statistical Package of Social Sciences (SPSS) 22.0 for Windows was used to manage and clean raw data and check whether several important assumptions for SEM were met: (a) univariate and multivariate normality assumptions; (b) missing data; (c) multicollinearity. Univariate and multivariate normality assumptions were examined through the indicators of skewness, kurtosis, Q-Q plot, and Mahalanobis distance (Ullman, 2006). After that, missing data and its pattern were identified, and two types of remedies were considered: data deletion and imputation. Generally, missing data imputation would be advised over missing data deletion to protect the sample size and minimize the

tendency to create biased results. Missing data imputation should be based on the assumption that data are missing at random (Gallagher et al., 2008; Ullman, 2006). Then, multicollinearity was examined by using bivariate correlations, and a correlation higher than r = .85 was considered a subject of further discussion (Weston & Gore, 2006).

Structural Equation Modeling

For the primary data analysis, SEM was used through lavaan package in R 4.2.3 (Rosseel, 2012). SEM is a comprehensive statistical model to test research hypotheses consisting of latent and observed variables (Hoyle, 1995). It has distinct advantages in that it provides indicators for model fit (e.g., Chi-Square χ^2, Comparative Fit Index [CFI], Root Mean Squared Error of Approximation [RMSEA], Standardized Root Mean Square Residual [SRMR]) as well as identifies interrelationships among the variables while accounting for measurement errors that are otherwise unrealized in traditional statistics (Suhr, 2006). SEM was chosen as a data analysis method, considering these benefits and the nature of the research question of the study. SEM consists of measurement and structural models; the measurement model aims to understand how well the observed variables combine to explain the latent variables whereas the structural model aims to examine the hypothesized relationships among latent variables. The current study examined both measurement and structural models.

Factor Analysis. There are two types of factor analysis: exploratory (EFA) and confirmatory factor analyses (CFA). EFA is used for generating potentially available solutions to explain observed indicators whereas CFA is used for confirming the specified number of factors (Kline, 2023). The current study conducted both EFA and CFA for the measures that were not validated in the prior literature such as the Career Achievability Scale. For the measures that were previously validated such as the Self-Stigma Scale-Short Form, Basic Psychological Need

Satisfaction, and Career Engagement Scale, only CFA was conducted to confirm the identified factors. When conducting EFA, oblique rotation was used as a rotation method to allow the factors to correlate (Osborne, 2015).

Reliability. Reliability testing of each measure was conducted using three indicators: internal consistency reliability, composite reliability, and average variance extracted (AVE). Internal consistency reliability also known as Cronbach's alpha is reported most often in the literature (Kline, 2023). It measures the degree to which responses to the indicators are consistent. The internal consistency reliability coefficient is interpreted as "excellent", "very good", and "adequate" when the value is .90, .80, and .70, respectively. The composite reliability is the ratio of explained variance over the total variance (Kline, 2023). It is used as an alternative to internal consistency reliability to take into account whether the indicator depends on a single factor and whether the items may have different factor loadings (Cronbach, 1951; Kline, 2023). The composite reliability has another strength in that it can be calculated in conjunction with SEM (Peterson & Kim, 2013). Lastly, AVE was used to calculate the average of the squared standardized factor loadings for indicators that depend on the same factor but not on the other factors (Kline, 2023). An AVE equal to or above .5 is recommended (Awang, 2014).

Validity. The validity testing of each measure was conducted via three indicators: convergent validity, construct validity, and discriminant validity. Convergent validity was assessed by looking at whether the AVE of a latent construct accounts for at least half of the variance in its associated indicators (Fornell & Larcker, 1981). Construct validity of measures was achieved when its model fit values were within the recommended ranges (Awang, 2014). Discriminant validity was achieved when the AVE value of a latent construct was larger than the squared correlation with other latent constructs (Hair et al., 2014; Awang, 2014).

Model Fit Analysis. Model examinations followed six steps: model specification, identification, estimation, evaluation, and modification (Kline, 2023). Model specification was the most important step because the following steps proceeded with the assumption that the model the researcher set was valid (Weston & Gore, 2006). The current study developed the model based on the theoretical framework and previous literature to examine the impact of self-stigma and the basic psychological needs on motivation, engagement, and career outcomes. Model identification was to find the most parsimonious model of the interrelationship among variables that were observed in the data (Kline, 2023). Once the model was specified and identified, collecting data from the participants was followed, and the values of parameters were estimated. There are different types of estimation methods, including Maximum Likelihood (ML) and Generalized Least Squares (GLS). The current study used the ML estimation method that is robust to a moderate level of violations of the normality assumption (Anderson & Gerbing, 1984; Weston & Gore, 2006).

The next step was identifying model fit and evaluation. Model fit was assessed by identifying: (a) the significance and strengths of the estimated parameter; (b) the variance accounted for observed or latent variables; (c) how well the specified model fits the data (Weston & Gore, 2006). There are a variety of model fit indexes available, and many researchers agreed on the best practice of reporting several indices of the model fit. Thus, following the guideline of Weston & Gore (2006), the current study reported four model fit indices: Chi-Square χ^2/degree of freedom (*df*); Comparative Fit Index (CFI); Root Mean Square Error of Approximation (RMSEA); the Standardized Root Mean Square Residual (SRMR). Chi-Square χ^2/df is an adjusted absolute fit index which shows a fundamental indication of how well the model fits the data over a no model at all (Kline, 2023). CFI is to show an incremental fit index over a null

model and if the value closes to 1.0, it indicates a better fit (Kline, 2023). RMSEA index is especially useful in correcting a model's complexity; the simpler model has a more favorable index value when the two models fit the data equally (Kline, 2023). SRMR is based on the values of covariance residual; smaller values indicate a better fit (Hooper et al., 2008). The guideline for acceptable fit for each index is as follows: Chi-square χ^2/df equal to or below 3.0; CFI equal to or larger than .90; RMSEA equal to or smaller than .08; SRMR equal to or smaller than .10 (Fan et al., 1999; Schermelleh-Engel et al., 2003). In addition to model fit indices, the following indicators were used to examine the measurement and structural models: factor loading, measurement error variances, standardized/unstandardized coefficient among latent variables, and covariance.

Lastly, after the initial model was examined, adjusting the research model was considered. The researcher tried to be cautious that such model-fit modification might result in formulating not a theory-driven, but rather a data-driven model. This shortcoming may be likely to occur when (a) small samples are available; (b) theoretically unacceptable modifications are made; (c) greatly misspecify the initial model (Green et al., 1998). To overcome the possibility of misspecification and misunderstanding of the model, the researcher kept track of how the model was modified based on the theoretical framework and made considerate interpretations of the models. The last procedure of adjusting the model was minimally done in the current study considering that the initially conceptualized model showed good model fit values across all model fit indices.

Parameter Estimation. Once the final model was set, all pathways between latent variables were examined. The indirect effects of self-determination and career engagement in the relationship between self-stigma and intrinsic work motivation and intrinsic work motivation and

career outcomes were the main lines of discussion. The direct effects were described as the pathway from self-stigma to intrinsic work motivation and from intrinsic work motivation and career outcomes while controlling for basic psychological needs of self-determination and career engagement, respectively (Gunzler et al., 2013). The indirect effects were described as the pathway from self-stigma to intrinsic work motivation and from intrinsic work motivation to career outcomes through self-determination and career engagement, respectively (Gunzler et al., 2013). Finally, the total effects were calculated by summing the direct and indirect effects of self-stigma on intrinsic work motivation and intrinsic work motivation on career outcomes. Based on the findings, the types of indirect effects of self-determination and career engagement were determined (e.g., no, full, or partial effect; Little et al., 2007).

CHAPTER 4: RESULTS

The purpose of the study was to investigate the measurement and structural research model as well as to understand the relationships among self-stigma, basic psychological needs, and career outcomes among transition-age individuals with disabilities. SEM was used via lavaan package on R 4.2.3 (Rosseel, 2012) to determine the model fit and estimate parameter coefficients. Additionally, the factor analysis and reliability and validity testing of each measure were conducted to ensure that the variables of interest were assessed by reliable and valid measures (Kline, 2023; MacKinnon et al., 2007). This chapter describes the results of the statistical analyses that answer the research questions.

Preliminary Data Analysis

After organizing and cleaning raw data, the preliminary data analysis was conducted to check whether several important assumptions for SEM were met. First, the univariate normality assumptions were checked by examining the skewness, kurtosis, and Q-Q plot of each variable. Although there are no firm rules about cut-off criteria for skewness and kurtosis, the current study used a general rule of thumb, which is also supported in the SEM data analysis (between -2 to +2 and -7 to +7 for skewness and kurtosis, respectively; Bryne, 2010; Hair et al., 2010; Kline, 2023). Also, the data for each variable fell on the 45-degree reference line in the Q-Q plot. Next, to assess the multivariate normality assumption, Mahalanobis distance (Ullman, 2006) was examined. A relatively high degree of Mahalanobis distance with a low *p*-value in the corresponding chi-square distribution may cause the null hypothesis to be rejected that the case comes from the same population as the rest of the data (Kline, 2023). By using a *p*-value being $< .001$ (conservative *p*-value; Kline, 2023), Mahalanobis distance testing detected six outliers, and thus, they were removed from the data, resulting in a total of 196 samples. After deleting the outliers, the univariate and multivariate normality assumptions were confirmed to be met.

Second, the assumption of missing data being missing completely at random (MCAR) was examined by using Little's test (MCAR; Little, 1988). There was a lack of evidence to reject the null hypothesis that the missing data is MCAR, leading to the conclusion that missing data is not systematic but random. The current study tried to avoid the usage of listwise deletion or the pairwise deletion method as a way of addressing missing data because it may result in biased estimates (Rubin, 1987; Dong & Peng, 2013). Instead, principled methods such as multiple imputation, full information maximum likelihood (FIML), and expectation-maximization methods were considered to produce accurate parameter estimates.

Among the abovementioned approaches, the current study used FIML, the most systematic approach for addressing missing data to produce unbiased parameter estimates and standard errors when the MCAR or MAR assumption is met (Enders & Bandalos, 2001). It also has a strength in that it is compatible with SEM (Olinsky et al., 2003). FIML aims to estimate the parameter using the information that is already contained in the current incomplete data set (Dong & Peng, 2013). Third, multicollinearity was examined by using bivariate correlations among all the variables of interest. The correlations among the variables were all within the acceptable range below .85 (**Table 4.2**; Weston & Gore, 2006).

Table 4.1

*Observed Variables Characteristics (*N *= 196)*

Variables		Mean	*SD*	Univariate Skewness	Univariate Kurtosis
Self-Stigma	Cog1	2.34	.75	0.08	-0.32
	Cog2	2.85	.75	-0.57	0.41
	Cog3	2.18	.74	0.09	-0.44
	Aff1	2.11	.76	0.31	-0.17
	Aff2	2.18	.86	0.17	-0.77
	Aff3	2.45	.83	-0.08	-0.56
	Beh1	1.94	.80	0.41	-0.56
	Beh2	1.92	.81	0.49	-0.44

Table 4.1 (cont'd)

	Beh3	1.57	.64	0.91	0.87
Autonomy	Aut1	3.70	.82	-0.53	0.16
	Aut2	3.54	.81	-0.37	-0.41
	Aut3	3.62	.89	-0.53	-0.09
	Aut4	3.78	.90	-0.68	0.23
Competence	Com1	3.45	.90	-0.30	-0.65
	Com2	3.53	.93	-0.55	-0.11
	Com3	3.64	.91	-0.43	-0.20
	Com4	3.58	.88	-0.33	-0.15
Relatedness	Rel1	3.83	.95	-0.91	0.79
	Rel2	4.00	.83	-0.74	0.62
	Rel3	3.98	.78	-0.57	0.55
	Rel4	4.04	.75	-0.44	-0.14
Intrinsic Work Motivation	Iden1	5.59	1.13	-0.31	-0.60
	Iden2	5.54	1.17	-0.55	0.13
	Iden3	5.44	1.23	-0.49	-0.12
	Intrin1	5.01	1.20	-0.12	-0.04
	Intrin2	4.90	1.33	-0.24	-0.16
	Intrin3	5.20	1.35	-0.55	0.20
Career Engagement	Eng1	5.04	2.66	0.51	-1.21
	Eng2	4.94	2.57	0.59	-1.00
	Eng3	4.98	2.51	0.56	-0.90
	Eng4	5.13	2.67	0.45	-1.25
	Eng5	5.71	2.54	0.22	-1.38
	Eng6	3.67	2.40	1.16	0.42
	Eng7	3.64	2.20	1.02	0.65
	Eng8	4.61	2.61	0.61	-0.79
	Eng9	4.16	2.47	0.91	-0.17
Career Achievability	Emp1	3.78	.99	-0.46	-0.65
	Emp2	3.65	.99	-0.54	-0.20
	Emp3	3.45	1.08	-0.40	-0.55
	Edu1	3.86	.88	-0.66	0.35
	Edu2	3.89	.84	-0.73	0.76
	Edu3	3.73	.91	-0.66	0.31

Table 4.2

Correlation Among Variables

		1	2	3	4	5	6	7	8
1	Self-Stigma	1							
2	Autonomy	-.49***	1						
3	Competence	-.48***	.60***	1					
4	Relatedness	-.44***	.47***	.52***	1				

Table 4.2 (cont'd)

5	Intrinsic Work Motivation	-.24	.42**	.37***	.29**	1		
6	Career Engagement	-.21*	.33**	.37***	.30**	.54***	1	
7	Employment Achievability	-.55***	.59***	.62***	.45***	.37***	.34***	1
8	Education Achievability	-.35***	.44***	.48***	.30**	.18**	.26**	.56***	1

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Descriptive Statistics

Descriptive statistics for the variables of interest (mean, standard deviation [*SD*], minimum, maximum, frequency, and percentage) are described in **Table 4.3**.

Table 4.3

*Descriptive Statistics (*N *= 196)*

	Mean	*SD*	Minimum	Maximum
Self-Stigma	2.17	.50	1.00	3.67
Autonomy	3.66	.65	2.00	5.00
Competence	3.55	.75	1.50	5.00
Relatedness	3.96	.68	1.75	5.00
Intrinsic Work Motivation	5.28	.99	2.33	7.00
Career Engagement	4.66	1.89	1.56	9.00
Employment Achievability	3.63	.86	1.33	5.00
Education Achievability	3.83	.77	1.00	5.00
			n	%
Paid/Unpaid Work Experience	No work experience		7	3.7
	Unpaid work		12	6.4
	Paid part-time work		124	66.0
	Paid full-time work		45	23.9
Number of Interviews	1		37	23.9
	2		40	25.8
	3		33	21.3
	4 or more		45	29.0
Job Wage	Less than $8.99		19	10.1
	$9.00 to $11.99		31	16.5
	More than $12.00		138	73.4

Note. The sum of *N* may not be equal to the total population size due to missing data; the percentage is based on valid percent.

RQ 1: Measurement Model Fit Analysis

Factor Analysis

To ensure that the variables were assessed by reliable and valid measurements which is a pre-requisite for SEM, factor analysis for each measure was conducted. For the measures with factors identified in the previous literature (i.e., Self-Stigma Scale-Short Form, Basic Psychological Need Satisfaction and Frustration Scale, Multidimensional Work Motivation Scale – Identified Regulation and Intrinsic Motivation, and Career Engagement Scale), only CFA was conducted, whereas both EFA and CFA were conducted for the measure that was not previously validated (i.e., Career Achievability Scale).

As a result, the Self-Stigma Scale-Short Form (Mak & Cheung, 2010) consisting of 9 questions assessing cognitive, affective, and behavioral factors produced an acceptable model fit with chi-square χ^2/df , CFI, RMSEA, and SRMR being 2.34, .95, .08, and.05, respectively (Schermelleh-Engel et al., 2003). Also, all the factor loadings fall into three latent variables were above .40 (Stevens, 1992; see **Table 4.4**), except for # 6 ("I feel like I cannot do anything about my disability status") being .32. Still, the factor loading of .32 is supported by Hair et al. (1995) as a minimum factor loading. Also, there has been a lack of conceptual evidence that the item should be omitted or changed (Mak & Cheung, 2010).

Second, the result of CFA of Basic Psychological Need Satisfaction and Frustration Scale (Chen et al., 2015) consisting of 12 items that measured autonomy, competence, and relatedness showed an acceptable-good model fit with chi-square χ^2/df , CFI, RMSEA, and SRMR being 1.91, .96, .07, and .05, respectively (Schermelleh-Engel et al., 2003). Also, all the factor loadings that fall into the three latent factors were above .40 (Stevens, 1992; see **Table 4.5**). Third, the result of CFA of the subscales of the Multidimensional Work Motivation Scale – Identified

Regulation and Intrinsic Motivation to measure intrinsic work motivation (Gagné et al., 2015) consisting of 6 items showed limited evidence for an acceptable-good model fit with chi-square χ^2/df, CFI, RMSEA, SRMR being 2.91, .98, .10, and .03, respectively (Schermelleh-Engel et al., 2003). Also, all the factor loadings that fall into two latent factors were above .40 (Stevens, 1992; see **Table 4.6**).

Fourth, for the Career Engagement Scale (Hirschi et al., 2014) consisting of 9 items to measure general and specific career engagement behaviors, CFA was conducted to confirm it as a unidimensional scale. The scale showed an acceptable-good model fit with chi-square χ^2/df, CFI, RMSEA, and SRMR being 1.99, .98, .07, and .03, respectively (Schermelleh-Engel et al., 2003). Also, all the factor loadings of observed indicators that fall into a single factor were above .40 (Stevens, 1992; see **Table 4.7**).

Lastly, for the Career Achievability Scale (De Vos & Soens, 2008) consisting of 6 items, both EFA and CFA were conducted considering that the measure was not validated in the previous literature. The EFA with a principal component extraction and direct oblimin rotation revealed two factors (i.e., employment achievability and education achievability) having an eigenvalue equal to or above 1 (total variance = 77.52 %; Kaiser-Meyer-Olkin = .78). The scale showed an acceptable-good model fit with chi-square χ^2/df, CFI, RMSEA, and SRMR being 1.09, .99, .02, and .03, respectively (Schermelleh-Engel et al., 2003). Also, all the factor loadings that fall into two latent factors were above .40 (Stevens, 1992; see **Table 4.8**).

Table 4.4

*Factor Analysis for Self-Stigma Scale-Short Form (*N *= 196)*

	Cognitive	Affective	Behavioral	M	*SD*
My identity as a person with disability is a burden to me.	.72			2.34	0.75

Table 4.4 (cont'd)

My identity as a person with disability incurs inconvenience in my daily life.	.62			2.85	0.75
The identity of being a person with disability taints my life.	.73			2.18	0.74
I feel uncomfortable because I am a person with disability.		.89		2.11	0.76
I fear that others would know that I am a person with disability.		.56		2.18	0.86
I feel like I cannot do anything about my disability status.		.32		2.45	0.83
I estrange myself from others because I am a person with disability.			.84	1.94	0.80
I avoid interacting with others because I am a person with disability.			.92	1.92	0.81
I dare not to make new friends lest they find out that I am a person with disability.			.70	1.57	0.64

Table 4.5

*Factor Analysis for Basic Psychological Need Satisfaction Scale (*N *= 196)*

	Autonomy	Competence	Relatedness	M	SD
I feel a sense of choice and freedom in the things I undertake.	.54			3.70	0.82
I feel that my decisions reflect what I really want.	.83			3.54	0.81
I feel my choices express who I really am.	.79			3.62	0.89
I feel I have been doing what I really interests me.	.51			3.78	0.90
I feel confident that I cannot do things well.		.80		3.45	0.90
I feel capable at what I do.		.82		3.53	0.93
I feel competent to achieve my goals.		.75		3.64	0.91
I feel I can successfully complete difficult tasks.		.69		3.58	0.88
I feel that the people I care about also cares about me.			.67	3.83	0.95
I feel connected with people who care for me, and for whom I care.			.91	4.00	0.82
I feel close and connected with other people who are important to me.			.86	3.98	0.78
I experience a warm feeling with the people I spend time with.			.61	4.04	0.75

Table 4.6

*Factor Analysis for Intrinsic Work Motivation Scale (*N = *196)*

	Identified Regulation	Intrinsic Motivation	M	SD
Because I personally consider it important to put efforts in this job.	.79		5.59	1.13
Because putting efforts in this job aligns with my personal values.	.89		5.54	1.17
Because putting efforts in this job has personal significance to me.	.86		5.44	1.23
Because I have fun doing my job.		.80	5.01	1.20
Because what I do in my work is exciting.		.94	4.90	1.33
Because the work I do is interesting.		.88	5.20	1.35

Table 4.7

*Factor Analysis for Career Engagement Scale (*N = *196)*

	Career Engagement	M	SD
Actively sought to design your professional future.	.87	3.66	1.08
Undertook things to achieve your career goals.	.75	3.65	1.05
Cared for the development of your career.	.81	3.68	1.04
Developed plans and goals for your future career.	.85	3.70	1.08
Sincerely thoughts about personal values, interests, abilities, and weaknesses.	.48	3.98	0.94
Collected information about employers, professional development opportunities, or the job market in your desired area.	.59	2.95	1.23
Established or maintained contacts with people.	.56	2.98	1.22
Voluntarily participated in future education, training, or other events to support your career.	.51	3.44	1.20
Assumed duties or positions that will help you progress professionally.	.64	3.26	1.18

Table 4.8

*Factor Analysis for Career Achievability Scale (*N = *196)*

	Employment Achievability	Education Achievability	M	SD
I believe I could easily obtain a job.	.75		3.78	0.99

Table 4.8 (cont'd)

I believe I could easily obtain a job that is in line with my level of education and experience.	.83		3.65	0.99
I believe I could easily obtain a job that would give me a high level of satisfaction.	.69		3.45	1.08
I believe I could easily enroll in college/post-secondary education/graduate school.		.93	3.86	0.88
I believe I could easily enroll in college/post-secondary education/graduate school that is in line with my level of education and experience.		.85	3.89	0.84
I believe I could easily enroll in college/post-secondary education/graduate school that would give me a high level of satisfaction.		.69	3.73	0.91

Reliability

The reliability of measurements should be affirmed prior to assessing the structural model, which can be achieved by testing internal consistency reliability, composite reliability, and AVE (Awang, 2014). The internal consistency reliability of the measure assesses the degree to which responses are consistent across the items of the measurement (Kline, 2023), also known as Cronbach's alpha. Internal consistency reliability tends to be higher when there are more items and inter-item correlations increase (Kline, 2023). The internal consistency reliability equal to or higher than .70 is recommended for an acceptable value (Nunnally, 1978). The composite reliability is defined as the explained variance over the total variance in each latent construct (Kline, 2023). A value of composite reliability equal to or greater than .60 is recommended (Awang, 2014). The AVE is defined as the average of the squared standardized pattern coefficients of indicators that depend on the corresponding factor (Kline, 2023). The value of AVE equal to or above .50 is suggested for an acceptable range of reliability (Awang, 2014).

For the Self-Stigma Scale – Short Form, Cronbach's alpha for cognitive and behavioral factors exceeded .70 whereas the affective factor did not reach .70. The composite reliability for cognitive, affective, and behavioral factors was higher than the recommended guideline (i.e., .60). The AVE scores exceeded the recommended cut-off value of .50 for the cognitive and behavioral factor, but not for affective factor. The reliability assessments showed partial support for the construct reliability of the measure (**Table 4.9**). Despite that, the affective factor was kept because there has been theoretical support for explaining self-stigma with three domains – cognitive, affective, and behavioral, and prior literature showed evidence for the construct reliability of the scale.

For the Basic Psychological Need Satisfaction and Frustration Scale, Cronbach's alpha for autonomy, competence, and relatedness exceeded .70 and the composite reliability was higher than the recommended value of .60 for all latent constructs. Lastly, the AVE scores for competence and relatedness were above .50 whereas the AVE score for autonomy was below .50 (i.e., .43). The results showed limited evidence for the construct reliability of the measure (**Table 4.10**). With regard to the Multidimensional Work Motivation Scale, Cronbach's alpha was .89 and .90 for identified regulation and intrinsic motivation, respectively, exceeding the recommended cut-off scores of .70. Also, the scale showed good levels of composite reliability and AVE scores, both being higher than the recommended criteria (**Table 4.11**). For the Career Engagement Scale, Cronbach's alpha and composite reliability were above the criterion values whereas the AVE was below the cut-off score, showing partial evidence for the reliability of the scale (**Table 4.12**). Lastly, the Career Achievability Scale consisting of two latent variables showed good levels of reliability across Cronbach's alpha, composite reliability, and AVE (**Table 4.13**).

Table 4.9

Reliability for the Self-Stigma Scale – Short Form

		Cronbach's alpha	Composite Reliability	AVE
Cognitive Factor	Cog1 Cog2 Cog3	.74	.73	.48
Affective Factor	Aff1 Aff2 Aff3	.59	.62	.38
Behavioral Factor	Beh1 Beh2 Beh3	.85	.87	.71

Table 4.10

Reliability for Basic Psychological Need Satisfaction and Frustration

		Cronbach's alpha	Composite Reliability	AVE
Autonomy	Aut1 Aut2 Aut3 Aut4	.75	.77	.46
Competence	Com1 Com2 Com3 Com4	.85	.85	.59
Relatedness	Rel1 Rel2 Rel3 Rel4	.84	.85	.59

Table 4.11

Factor Analysis for Multidimensional Work Motivation Scale

		Cronbach's alpha	Composite Reliability	AVE
Identified Regulation	Ident1 Ident2	.89	.89	.73

Table 4.11 (cont'd)

	Ident3			
Intrinsic Motivation	Intrin1 Intrin2 Intrin3	.90	.91	.77

Table 4.12

Reliability for Career Engagement Scale

		Cronbach's alpha	Composite Reliability	AVE
Engagement	Eng1 Eng2 Eng3 Eng4 Eng5 Eng6 Eng7 Eng8 Eng9	.89	.82	.46

Table 4.13

Reliability for Career Achievability Scale

		Cronbach's alpha	Composite Reliability	AVE
Employment Achievability	Emp1 Emp2 Emp3	.80	.80	.57
Education Achievability	Edu1 Edu2 Edu3	.86	.86	.68

Validity

The validity of the measures was assessed via convergent, construct, and discriminant validity. The convergent validity is achieved when all values of AVE exceed .50. In light of this rule of thumb, the measures of the Self-Stigma Scale Short Form, Basic Psychological Need Satisfaction and Frustration Scale, and Career Engagement Scale have been found to be limited

to achieve convergent validity, whereas other measures such as Multidimensional Work Motivation Scale and Career Achievability Scale have adequate evidence to support convergent validity. The construct validity is achieved by the measurement model's meeting the majority of the model fit indexes satisfactorily as **Table 4.18** indicates.

Following the definition of the Fornell-Larcker testing system, the discriminant validity is supported when the AVE of each latent variable is higher than the highest squared correlation with the other latent variables (Awang, 2014; Ab Hamid et al., 2017). Due to the way discriminant validity is defined, it was assessed for the measures that have at least two latent variables (i.e., Self-Stigma Scale-Short Form, Basic Psychological Need Satisfaction and Frustration, Multidimensional Work Motivation Scale, and Career Achievability Scale; **Table 4.14-4.17**). For the Self-Stigma Scale-Short Form, discriminant validity is confirmed except for cognitive and affective domains in which the AVE values are slightly lower than its squared correlation with other domains. The discriminant validity for the other measures was confirmed by showing the AVE values of the latent variables were above the squared correlations between the other latent variables.

Table 4.14

Discriminant Validity of Self-Stigma Scale – Short Form

	Cognitive	Affective	Behavioral
Cognitive	.48	-	-
Affective	.49	.38	-
Behavioral	.34	.39	.71

Note. The value in the diagonal is AVE for the respective latent variable and the value in the other cells represents a squared correlation with other latent variables.

Table 4.15

Discriminant Validity of Basic Psychological Need Satisfaction and Frustration

	Autonomy	Competence	Relatedness
Autonomy	.46	-	-
Competence	.39	.59	-
Relatedness	.26	.28	.59

Note. The value in the diagonal is AVE for the respective latent variable and the value in the other cells represents a squared correlation with other latent variables.

Table 4.16

Discriminant Validity of Multidimensional Work Motivation Scale

	Identified Regulation	Intrinsic Motivation
Identified Regulation	.73	-
Intrinsic Motivation	.37	.77

Note. The value in the diagonal is AVE for the respective latent variable and the value in the other cells represents a squared correlation with other latent variables.

Table 4.17

Discriminant Validity of Career Achievability Scale

	Employment Achievability	Education Achievability
Employment Achievability	.57	-
Education Achievability	.32	.68

Note. The value in the diagonal is AVE for the respective latent variable and the value in the other cells represents a squared correlation with other latent variables.

Model Fit Analysis

In SEM, it is a common agreement that one should avoid reporting all model fit indices; rather, several reliable model fit indices should be selected in the report, including chi-square x^2, RMSEA (Steiger, 1990), CFI (Bentler, 1990), and SRMR (Kline, 2023). Chi-square x^2, RMSEA, and SRMR are classified as absolute fit indices, describing how well the proposed model fits the data by comparing it with a no model at all (Jöreskog & Sörbom, 1993).

Considering that chi-square x^2 is sensitive to the sample size (Jöreskog & Sörbom, 1993), an alternative index such as normed chi-square (chi-square x^2/df) was used. CFI is a type of incremental fit indices that aims to compare the model with a baseline model (Bentler, 1990). Model fit analyses were conducted for each measurement as well as the whole measurement model.

Following the rule of thumb for the model fit assessment (Schermelleh-Engel et al., 2003), each measurement showed acceptable-good model fit values across all model fit indices except the Multidimensional Work Motivation Scale. First, the Self-Stigma Scale-Short Form showed the value of the chi-square x^2/df, CFI, RMSEA, and SRMR being 2.34, .95, .08, and .05, within an acceptable model fit (Schermelleh-Engel et al., 2003). Second, Basic Psychological Need Satisfaction and Frustration showed the value of chi-square x^2/df, CFI, RMSEA, and SRMR being 1.91, .96, .07, and .05, within an acceptable model fit (Schemelleh-Engel et al., 2003). Third, the Multidimensional Work Motivation Scale showed model fit values with chi-square x^2/df, CFI, RMSEA, and SRMR being 2.91, .98, .10, and .03, within an acceptable model fit except chi-square x^2 /*df* and RMSEA (Schermelleh-Engel et al., 2003). Fourth, the Career Engagement Scale showed model fit values with chi-square x^2/df, CFI, RMSEA, and SRMR being 1.99, .98, .07, and .03, within an acceptable model fit (Schermelleh-Engel et al., 2003). Lastly, the Career Achievability Scale showed the value of chi-square x^2/df, CFI, RMSEA, and SRMR being 1.09, .99, .02, and .03, within an acceptable model fit (Schermelleh-Engel et al., 2003).

Also, the whole measurement model showed acceptable–good model fit values across all model fit indices. Specifically, the model showed the value of the chi-square x^2/df, CFI, RMSEA, and SRMR being 1.50, .92, .05, and .08 (Shermelleh-Engel et al., 2003). Although a

value of CFI equal to or above .95 is recommended to be an ideal good fit, there is previous research supporting that CFI above .90 still indicates an acceptable fit (Fan et al., 1999). Also, Yuan et al. (2016) have proposed that CFI that is equal to or above .92 indicates a fair model fit. All model fit estimates of the measures and the measurement model are described in **Table 4.18**.

RQ 2.1: Structural Model Fit Analysis

Model Fit Analysis

Following the rule of thumb for the model of SEM (Shermelleh-Engel et al., 2003; Fan et al., 1999; Yuan et al., 2016), the structural model showed acceptable–good model fit values across all the model fit indices. Specifically, the model showed the value of the chi-square x^2/df, CFI, RMSEA, and SRMR being 1.45, .92, .05, and .07. All the model fit statistics for the measurement and structural model are described in **Table 4.18**.

Table 4.18

Model Fit Analysis

	Chi-square x^2/df	CFI	RMSEA	SRMR
Good Model Fit Criteria	$0 \leq x^2/df \leq 2$	$\geq .95$	$0 \leq$ RMSEA $\leq .05$	$0 \leq$ SRMR$\leq .05$
Acceptable Model Fit Criteria	$2 < x^2/df \leq 3$	$\geq .90$	$.05 <$ RMSEA $\leq .08$	$.05 <$ SRMR$\leq .10$
Self-Stigma Scale-Short Form	2.34	.95	.08	.05
Basic Psychological Need Satisfaction Scale	1.91	.96	.07	.05
Multidimensional Work Motivation Scale	2.91	.98	.10	.03
Career Engagement Scale	1.99	.98	.07	.03
Career Achievability Scale	1.09	.99	.02	.03
Measurement Model	1.50	.92	.05	.08
Structural Model	1.45	.92	.05	.07

Note. N = 196; CFI = Comparative fit index; RMSEA = Root mean square error of approximation; SRMR = Standardized root mean square residual.

RQ 2.2: Indirect Effect of Basic Needs of Self-Determination in the Relationship between Self-Stigma and Intrinsic Work Motivation

The research model aimed to understand whether the basic psychological needs such as autonomy, competence, and relatedness have an indirect effect on the relationship between self-stigma and intrinsic work motivation. The use of the term, mediation was avoided given the fact that the current study was designed as a cross-sectional study that did not take into account the time precedence among the variables (Kline, 2023). Before identifying the indirect impact of autonomy, competence, and relatedness in the relationship between self-stigma and intrinsic work motivation, the direct relationships among the variables were understood. The findings revealed that there are significant relationships between self-stigma and autonomy (β = -.61, p < .001), competence (β = -.63, p < .001), and relatedness (β = -.56, p < .001). When it comes to the relationships between the basic psychological needs and intrinsic work motivation, autonomy and competence were significantly associated with intrinsic work motivation (β = .34, p < .05; β = .37, p < .01). However, relatedness was not significantly associated with intrinsic work motivation (β = .10, p = .29).

Regarding the indirect effect of autonomy, competence, and relatedness in the relationship between self-stigma and intrinsic work motivation, autonomy and competence had a significant, complete indirect impact (β = -.21, p <. 05; β = -.24, p <. 05); however, relatedness did not have a significant indirect impact on the relationship between self-stigma and intrinsic work motivation (β = -.06, p = .29). The total effect for intrinsic work motivation was significant with the standardized coefficient value being -.70 (p < .001). **Table 4.19** shows the parameter

estimates summary that describes the relationship between self-stigma and intrinsic work motivation.

Table 4.19

Parameter Estimates Summary in the Relationship Between Self-Stigma and Intrinsic Work Motivation

	Parameter	Standardized Coefficient	Standard Error	*p*-value	Supported
Direct Effect	Self-Stigma → Autonomy	-.61	.15	<.001	Supported
	Self-Stigma → Competence	-.63	.22	<.001	Supported
	Self-Stigma → Relatedness	-.56	.19	<.001	Supported
	Self-Stigma → Intrinsic Work Motivation	-.20	.14	.18	Not supported
	Autonomy → Intrinsic Work Motivation	.34	.12	<.05	Supported
	Competence → Intrinsic Work Motivation	.37	.07	<.01	Supported
	Relatedness → Intrinsic Work Motivation	.10	.06	.29	Not supported
Indirect Effect	Self-Stigma → Autonomy → Intrinsic Work Motivation	-.21	.08	<.05	Supported
	Self-Stigma → Competence → Intrinsic Work Motivation	-.24	.09	<.05	Supported
	Self-Stigma → Relatedness → Intrinsic Work Motivation	-.06	.05	.29	Not supported
Total Effect for Intrinsic Work Motivation		-.70	.18	<.001	Supported

RQ 2.3: Indirect Effect of Career Engagement in the Relationship between Intrinsic Work Motivation and Career Outcomes

The research model aimed to understand whether career engagement has an indirect effect on the relationship between intrinsic work motivation and career outcomes. Before identifying the indirect impact of career engagement in the relationship between intrinsic work motivation and multiple career outcomes, the direct relationships among the variables were understood. The findings revealed significant relationships between intrinsic work motivation

and career engagement (β = .56, p < .001). With regard to the direct relationship between intrinsic work motivation and multiple career outcomes, significant results were found for employment achievability (β = .90, p < .001) and education achievability (β = .62, p < .01), but not for work experience (β = -.02, p = .88), number of interviews (β = .12, p = .35), and hourly wage (β = -.04, p = .75). There were no significant associations between career engagement and career outcomes, including work experience (β = .15, p = .16), number of interviews (β = .05, p = .66), hourly wage (β = .07, p = .85), employment achievability (β = -.02, p = .88), and education achievability (β = .10, p = .37).

The indirect effect of career engagement was insignificant for any of the career outcomes, including work experience (β = .08, p = .18), number of interviews (β = -.01, p = .88), hourly wage (β = .05, p = .38), employment achievability (β = -.06, p = .51), and education achievability (β = -.04, p = .60). Lastly, the total effects for work experience, number of interviews, and hour wage were not significant (β = .06, p = .47; β = .11, p = .25; β = .02, p = .87) whereas the total effects for employment and education achievability were significant (β = .84, p < .001; β = .58, p < .001). **Table 4.20** represents the parameter estimates summary in the relationship between intrinsic work motivation and career outcomes. **Figure 4.1** shows the full research model parameter visualization.

Table 4.20

Parameter Estimates Summary in the Relationship Between Intrinsic Work Motivation and Career Outcomes

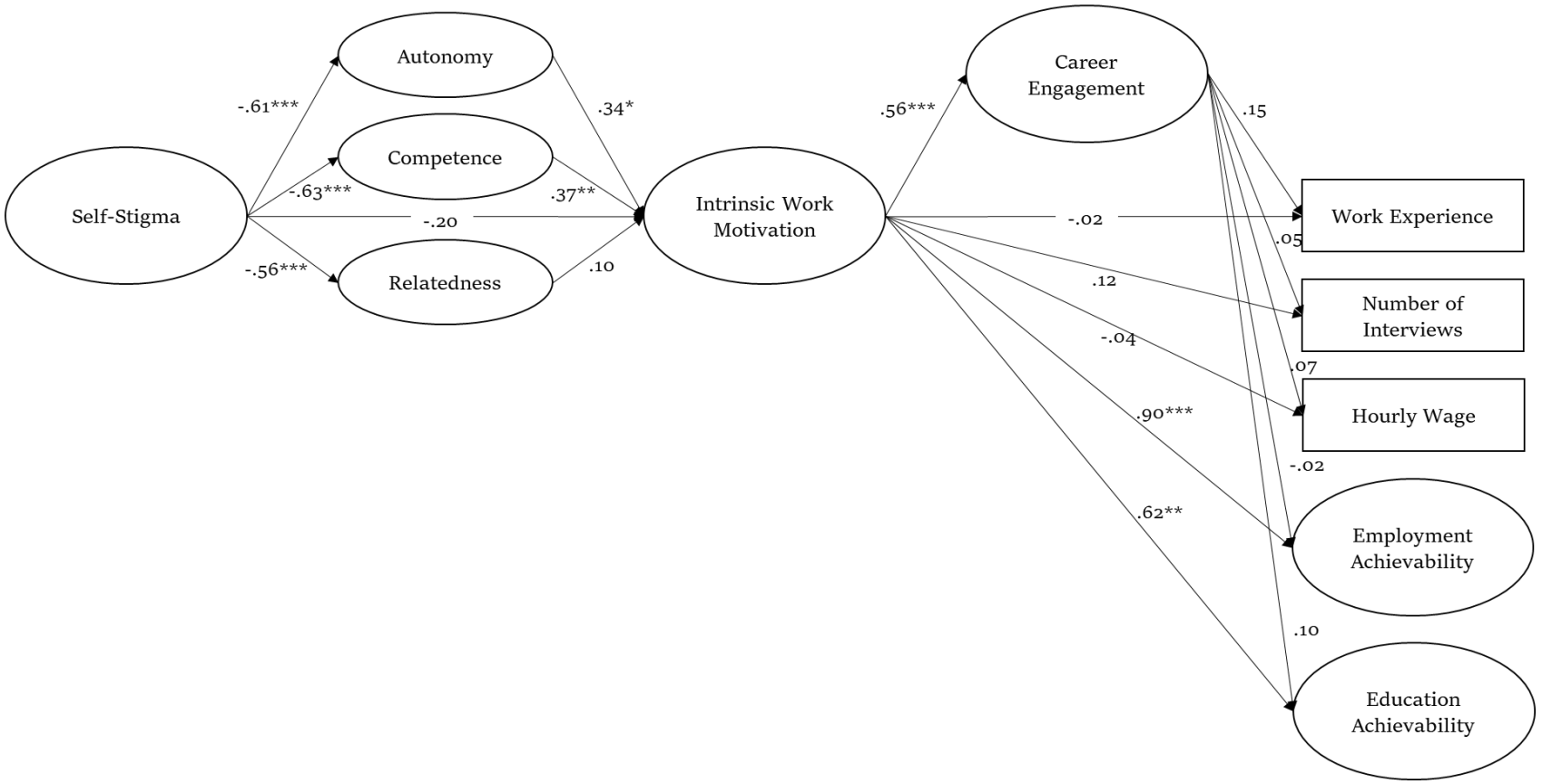
	Parameter	Standardized Coefficient	Standard Error	*p*-value	Supported
Direct Effect	Intrinsic Work Motivation → Career Engagement	.56	.35	<.001	Supported
	Intrinsic Work Motivation → Work Experience	-.02	.21	.88	Not supported

Table 4.20 (cont'd)

	Intrinsic Work Motivation → Number of Interviews	.12	.41	.35	Not supported
	Intrinsic Work Motivation → Hourly Wage	-.04	.21	.75	Not supported
	Intrinsic Work Motivation → Employment Achievability	.90	.47	<.001	Supported
	Intrinsic Work Motivation → Education Achievability	.62	.39	<.01	Supported
	Career Engagement → Work Experience	.15	.08	.16	Not supported
	Career Engagement → Number of Interviews	.05	.06	.66	Not supported
	Career Engagement → Hourly Wage	.07	.21	.85	Not supported
	Career Engagement → Employment Achievability	-.02	.15	.88	Not supported
	Career Engagement → Education Achievability	.10	.08	.37	Not supported
Indirect Effect	Intrinsic Work Motivation → Career Engagement → Work Experience	.08	.11	.18	Not supported
	Intrinsic Work Motivation → Career Engagement → Number of Interviews	-.01	.20	.88	Not supported
	Intrinsic Work Motivation → Career Engagement → Hourly Wage	.05	.11	.38	Not supported
	Intrinsic Work Motivation → Career Engagement → Employment Achievability	-.06	.19	.51	Not supported
	Intrinsic Work Motivation → Career Engagement → Education Achievability	-.04	.16	.60	Not supported
Total Effect for Work Experience		.06	.16	.47	Not supported
Total Effect for the Number of Interviews		.11	.30	.25	Not supported
Total Effect for the Hourly Wage		.02	.16	.87	Not supported
Total Effect for Employment Achievability		.84	.38	<.001	Supported
Total Effect for Education Achievability		.58	.32	<.001	Supported

Figure 4.1

Research Model Parameter Estimates Visual



CHAPTER 5: DISCUSSION

The current study aimed to understand the relationship among self-stigma, basic psychological needs, intrinsic work motivation, career engagement, and career outcomes as well as suggest a theory-driven and empirically validated model. In this chapter, the summary and explanations of the study findings are discussed. Also, the limitations of the study and implications for practice, research, and policy are provided.

Summary of Major Study Findings

Transition-age individuals with disabilities have consistently faced challenges in career preparation and decision-making (Newman et al., 2009). The factors that impact career outcomes among individuals with disabilities include self-stigma (Hielscher & Waghorn, 2017), self-determination (Getzel & Thoma, 2008), motivation, and engagement in career preparation activity (Carter et al., 2012; Shandra & Hogan, 2008). Despite the substantial body of literature investigating the factors that facilitate or hinder career preparation and outcomes among transition-age individuals with disabilities, the studies that explained how these factors are connected and interact fell short. The current study attempted to understand the psychosocial mechanisms leading to career preparation and outcomes among transition-age individuals with disabilities.

Measurement and Structural Model Fit

SEM consists of measurement and structural models. A measurement model measures how the latent variables are explained by the observed indicators, and the structural model tests hypothetical relationships among variables (Hoyle, 1995; Kline, 2023). First, the study showed that the suggested measurement model can assess and capture the latent variables with the observed indicators by showing its acceptable model fit and evidence for the reliability and validity of each measure (Hoyle, 1995; Kline, 2023). Also, the study found that the suggested

research model can serve as a useful framework for explaining the relationship between psychosocial factors and career outcomes among transition-age individuals with disabilities by showing an acceptable model fit. The research model is conceptualized following the premises of the *Why Try* model (Corrigan, 2009) in that individuals who have high self-stigma are likely to experience disrupted psychosocial outcomes such as low self-esteem and self-efficacy and less involvement in goal-pursuit behaviors and *Self-Determination Theory* (Ryan & Deci, 2000) in that all individuals have basic psychological needs to be met such as autonomy, competence, and relatedness. The current research model supported the fact that individuals with high self-stigma are likely to experience a low level of autonomy, competence, and relatedness, which negatively impacts their intrinsic work motivation, engagement, and career outcomes.

Indirect Effects of Self-Determination and Engagement

The current study found the complete indirect effects of autonomy and competence in the relationship between self-stigma and intrinsic work motivation. However, the study did not find a significant indirect effect of relatedness in the impact of self-stigma on intrinsic work motivation. It means that individuals with high self-stigma are likely to have low intrinsic work motivation through the decreased level of autonomy and competence, but not through the decreased level of relatedness. Also, the complete indirect effects of autonomy and competence indicate that individuals' perceived autonomy and competence play an important role in determining individuals' intrinsic work motivation, especially when individuals have a high level of stigma.

Other Parameters

The current study found a direct, negative impact of self-stigma on basic psychological needs, meaning that individuals with a high level of self-stigma are likely to have a low level of

autonomy, competence, and relatedness. Also, the basic psychological needs negatively impacted intrinsic work motivation, indicating that individuals who have not met the needs of autonomy, competence, and relatedness are less likely to be intrinsically motivated. Third, intrinsic work motivation was significantly associated with engagement; in other words, individuals who are intrinsically motivated to pursue their careers are likely to be involved in career-related activities. Fourth, intrinsic work motivation was significantly associated with employment and education achievability, meaning that individuals who are intrinsically motivated are likely to perceive that they can achieve their future career goals in employment and education. However, intrinsic work motivation was not significantly related to observed career outcomes, thus, it is not yet clear whether individuals' intrinsic work motivation can be translated into career outcomes such as work experience, the number of interviews, and job wages. Lastly, engagement was not found to be a significant factor in explaining career outcomes such as observable career outcomes or perceived employment and education achievability.

Discussion

Individuals with disabilities have been a population who tends to face substantial disparities in employment, education, and other civic life due to public stigma, prejudices, and discrimination. When individuals are aware of and agree with public stigma and apply it to their concept, self-devaluation is likely to occur, leading to lowered self-esteem, self-efficacy, and less goal-pursuit behaviors (Corrigan et al., 2009). Despite the negative impact of self-stigma, the extent to which stigma toward the disability population impacts individuals' career preparation and outcomes has not been extensively examined. Moreover, stigma-related research has been conducted over the past decades mainly toward individuals with psychiatric disabilities (Ditchman et al., 2013); less has been done for individuals with other types of disabilities or

those who are in a unique developmental phase such as individuals in a transition period. In response to the research gap, the current study aimed to provide a theory-driven and empirically validated conceptual framework to explain career preparation and outcomes among transition-age individuals with disabilities.

RQ 1 & 2.1: Research Model Measurement and Structural Fit

By showing good measurement and structural model fits, the research framework was found to be a valid model in describing the psychosocial mechanisms for career preparation and outcomes among transition-age individuals with disabilities. It is aligned with the prior conceptual frameworks and empirical findings that emphasized the psychosocial factors in explaining a person's goal-seeking behaviors. For example, Corrigan et al.'s *Why Try* Model (2009) suggests that a person's goal-pursuit behavior is influenced by an individual's endorsed stigma as well as his/her self-esteem and self-efficacy. Link et al.'s *Modified Labeling Theory* (1989) also proposed the crucial role of psychological coping and empowerment that can resist devaluation and discrimination and the following negative consequences such as lowered self-esteem, a lack of power, or disrupted social networking ties. Prior empirical findings also supported the crucial role of psychosocial factors in predicting an individual's career outcomes such as self-stigma (Brohan et al., 2010; Hielscher & Waghorn, 2017; Lv et al., 2013), self-determination (Field et al., 2003; Shogren et al., 2015; Wehmeyer & Schawartz, 1998), work motivation (Çetin & Aşkun, 2018; Wayne et al., 1999), and career engagement (Baluku et al., 2021; Hirschi et al., 2013).

The model has a potential for expansion toward individuals who are in different developmental stages such as adults in middle, or late adulthood, or who have different types of disabilities to enrich the description of the model. For example, the magnitude of intrinsic work

motivation or the persistence of engagement in career-related behaviors may look different for individuals in middle or late adulthood who may have established roles at their work and may have had control over their careers (Super, 1980). The research model may also be shaped differently for individuals with different types of disabilities. For example, self-stigma may impact psychosocial and career outcomes more severely for individuals with psychiatric disabilities than those with other types of disabilities, considering that people with psychiatric disabilities are typically at an increased risk for prejudice and discrimination (Corrigan et al., 2005). Also, whether a person has a congenital or acquired disability may shape the model differently because individuals with congenital disabilities are typically at better odds of accepting their disability status (Li & Moore, 1998), by which they may be less likely to experience the negative chain effect of self-stigma. Further, the research model may provide a theoretical basis for developing and experimenting with self-determination-based intervention for transition-age individuals with disabilities to help them address self-stigma, meet the basic psychological needs, and improve their career development opportunities.

RQ 2.2: Indirect Effects of Basic Psychological Needs of Self-Determination in the Relationship between Self-Stigma and Intrinsic Work Motivation

The significant and complete indirect effects of autonomy and competence were revealed in the relationship between self-stigma and intrinsic work motivation. In other words, individuals' self-stigma does not automatically lower the level of intrinsic work motivation; instead, their stigma may lower the level of autonomy and competence, resulting in less intrinsic motivation. The chain effect of self-stigma also corresponds to the *Why Try* model (Corrigan et al., 2009) and *Modified Labeling Theory* (Link, 1989; 1988) that proposed that self-stigma impacts an individual's psychosocial elements such as self-esteem, self-efficacy, and coping that

eventually result in less goal-pursuit behaviors, disrupted social networks, unemployment, and less earning. In addition to such psychosocial elements, the current finding can add that self-stigma may hinder an individual's basic psychological needs satisfaction. Specifically, the indirect effect of autonomy in the relationship between self-stigma and intrinsic motivation may occur because individuals who internalized negative social evaluations and criticisms might have been more reactive to other people's opinions while being less responsive to reclaiming control over their lives. This might have subsequently resulted in less motivation for autonomous goal-pursuit behaviors (Corrigan et al., 2009). Prior literature also demonstrated the negative impact of self-stigma on help-seeking attitudes, autonomous motivation, and psychological well-being (Barta & Kiropoulos, 2022; CaqueoUrízar et al., 2020; Rose et al., 2019).

As regards the indirect effect of competence in the relationship between self-stigma and intrinsic work motivation, individuals with high self-stigma might have felt low confidence in successfully acting for their goals, resulting in avoidance of the situations that have the risk of further disrespect, devaluation, and discrimination. During the process, individuals might have lost the motive to accomplish personal or professional aspirations (Corrigan et al., 2009; Link et al., 1989). Surmann et al.'s study (2017) also demonstrated that individuals with a low level of competence, control beliefs, and negative self-concept are more likely to be socially alienated and withdrawn and less likely to resist stigma and stereotype endorsement.

However, relatedness did not have the same indirect effect as autonomy and competence did in the relationship between self-stigma and intrinsic work motivation. It means that individuals' perceived level of connectedness with others may not have a significant impact on how individuals' self-stigma influences intrinsic work motivation. This should be interpreted with caution because it contradicted the previous findings that relatedness is associated with

individuals' intrinsic motivation (Cox et al., 2009; Ryan & Deci, 2000). This result might have reflected the unique developmental characteristics that the participants encountered such as transition to employment or further education (Super, 1990), where they are more focused on career exploration, establishment, and decision-making instead of close relationship building and expansion. Also, it is possible that individuals who are solely focused on the outcomes of their efforts (e.g., gaining desired employment/education) may not view others in their environments as someone who can hold feelings of relatedness and connectedness (Kaufman & Dodge, 2009). The author would like to suggest a possibility where different effects of relatedness may appear for other groups of populations such as adults in middle or late adulthood.

The study also revealed a novel finding that self-stigma is significantly related to basic psychological needs. There has been a lack of studies that described the direct relationship between self-stigma and self-determination, and the relationship between these two was presumably understood with the fragmented research evidence. As aligned with the presumptions, the current study empirically verified that self-stigma is negatively associated with autonomy, competence, and relatedness. It calls for intervening efforts to help transition-age individuals with disabilities address discrimination experiences, prevent such experiences from impacting their self-concepts, rebuild positive self-images, reclaim self-directed behavior, improve competence, and establish positive and supportive interpersonal relationships.

RQ 2.3: Indirect Effect of Career Engagement in the Relationship between Intrinsic Work Motivation and Career Outcomes

The indirect impact of engagement was not significant in the relationship between intrinsic work motivation and career outcomes. Instead, it was found that intrinsic work motivation had a significant direct impact on career outcomes. This means that individuals'

perceived achievability for employment and education may be likely to be impacted by how intrinsically motivated they are, instead of how much they are engaged with career-related activities. This may be related to the fact that not all participants might have been involved in career preparation activity when they filled out the survey. Thus, their level of engagement in career-related activities might not have reflected individuals' actual/anticipated participation in career preparation. Also, career engagement might have been differently perceived by participants depending on how proximal/distant they are to exit high school/college and the active stage of career-seeking. Future studies with an expanded sample who have different developmental tasks and with comprehensive items of career engagement activities are warranted to re-examine the indirect effect of engagement in a relationship between intrinsic work motivation and career outcomes. It should be noted that there have been several studies that showed a significant impact of engagement on career outcomes (Tomaszewski et al., 2020; Perry et al., 2010).

The current study found significantly positive relationships between intrinsic work motivation and engagement, indicating that individuals who are intrinsically motivated are more likely to engage in career-related activities. It speaks for the benefits of intrinsic work motivation in a person's career preparation and outcomes. The substantial amount of literature also acknowledged and emphasized the crucial role of intrinsic motivation in career-seeking behaviors (Boekeloo et al., 2015), career adaptability (Shin & Lee, 2017), persistence (Grant, 2008), and improved mental health and well-being (Byrd et al., 2007). It informs counseling professionals to help transition-age individuals with disabilities understand and find the intrinsic value of employment and/or further education (i.e., enjoyment and satisfaction of doing an activity) beyond its instrumental value in gaining positive outcomes or avoiding negative

consequences. Despite its meaningful implications, the result should be interpreted with caution by having a culturally sensitive lens because the meaning of employment may be perceived differently depending on a person's culture (Rosso et al., 2010). Also, the result should not be interpreted in a way that intrinsic motivation is the only desirable form that is significantly associated with successful work outcomes. Indeed, according to Ryan & Deci (2000), it is natural that individuals are motivated by the combination of varying degrees of intrinsic and extrinsic motivation.

Also, the current study found that intrinsic work motivation and engagement were not significantly associated with any of the observable outcomes such as work experience, the number of interviews, and job wages. This might be attributed to the fact that the majority of the participants are currently enrolled in high school/college/university. Thus, they might have felt distant from engaging in actual career-seeking behaviors while staying in the preliminary career preparation and conceptualization stage. Another hypothesis is that there may exist a cognitive dissonance between individuals' perceptions and the actual behavior of their career preparation (Festinger, 1957). For example, individuals may believe and feel that their career goals are within their capabilities whereas their engagement in career-seeking and preparation activities may fall short. It suggests the need for conducting career assessments for transition-age individuals with disabilities to help them understand their actual and perceived career preparation and how much they correspond. Future research is warranted to (a) expand participants into those who are more proximal to career-seeking activities and (b) investigate the correspondence between perceived and actual career preparation and its impact on career outcomes.

Limitations

The current study has several limitations to be considered when interpreting the results. First, the current study used nonprobability sampling, thus, it may be hard to say that it yielded an unbiased sample that represents the target population (Jager et al., 2017). Participants in the current study might have been selected based on their proximity to the study and their accessibility to the survey. Due to the potential of an unrepresentative sample of the population, the findings in the study might have lacked generalizability (Berndt, 2020). Specifically, the sample of the current study showed homogeneous characteristics in some demographic indicators such as race/ethnicity, gender, age, and education level; the majority of the participants were White, female, aged 18 to 26, and pursuing a bachelor's degree or beyond. However, it should be noted that convenience sampling has been the norm in social science especially when probability sampling is hard to execute or is challenged by costs in money, time, and effort (Jager et al., 2017). Probability sampling might not be feasible in the current study due to the fact that members of the population are unknown and hard to reach (Berndt, 2020). Nevertheless, future studies may want to consider implementing systematic sampling, stratified random sampling, or cluster sampling to increase external validity as well as the generalizability of the findings (Berndt, 2020).

Second, the study might have lacked a large sample size although a priori power analysis showed that the current sample size is large enough for achieving .80 power on an alpha level of .05 with the value of RMSEA at least .05. In addition, a post-hoc power analysis revealed that the study achieved above .80 power to detect a specified effect with a given sample size on an alpha level of .05 with the value of RMSEA being .05. However, SEM typically requires a large sample size, especially with a complex model that has several parameters to be estimated. For

example, according to Jackson's N:*q* rule, 20 sample sizes are needed to estimate one parameter in the model. Following the rule strictly, larger sample sizes over 200 might have been ideal in the current study. It informs the future research needs to expand the sample size to improve the statistical power. Also, with a larger sample size, it is feasible to conduct EFA and CFA of the measurement with a separate sample; half of the sample can be used to construct a measurement model and the other half can be used to validate the solution obtained from the EFA for cross-validation (Anderson & Gerbing, 1988; Cabrera-Nguyen, 2010). Especially for the measures that have not been explored or validated through EFA in the previous literature (i.e., Career Achievability Scale), a thorough examination of factor analysis is critical for determining the reliability and validity of the measurement and improving the credibility of the findings.

Third, the affective domain in the Self-Stigma Scale – Short-Form has its Cronbach's alpha and AVE below the recommended cut-off scores. It might be critically acclaimed, considering that the measures with strong psychometric properties are essential in SEM. Also, one of the items (# 6) in the Self-Stigma Scale – Short-Form had a factor loading lower than the recommended cutoff score (Stevens, 1992), providing limited evidence for the validity of the scale. Despite this fact, the current study did not choose to modify the measure due to its strong theoretical background and previous validation of the measure in the literature. Further investigation on the reliability and validity of the Self-Stigma Scale – Short-Form would be needed with a sample that has heterogeneous demographic characteristics.

Fourth, although the researcher excluded the possibility of multicollinearity among the variables of interest in the current study by showing the correlations are all below .85, the possibility of the variables conceptually overlapping still holds. For example, individuals' competence might overlap with their perception of employment or education achievability. Also,

it is common to interchange the words between motivation and engagement, which might have led participants to be confused about the constructs being asked. Clear operationalization of the variables or making the model parsimoniously by excluding conceptually similar variables should be considered in a follow-up study.

Fifth, the study relied on self-report surveys, which might have contributed to several limitations such as self-presentation, acquiescent responding, extreme responding, constraints on self-knowledge, and cultural limitations (Fan et al., 2006; Miller, 2011; Paulhus & Vazire, 2007). For example, individuals might have been compelled to give an overly positive response when they were asked to describe their self-concept to reach a socially desirable image (Miller, 2011; *self-presentation*). Also, individuals might have been tempted to agree with statements, which is more pronounced when complex statements are asked in the survey (*acquiescent responding*; Schuman & Presser, 1981). Third, extreme responding can be impacted by ambiguity, emotional arousal, and rapid responding patterns (Paulhus & Vazire, 2007). Fourth, individuals may have constraints on self-knowledge due to a lack of information to assess themselves. In another case, individuals might have experienced difficulties in integrating information due to a plethora of information (Paulhus & Vazire, 2007). Lastly, there exist cultural dimensions to consider in self-reports. For example, individuals from Eastern cultures tend to show more moderacy and ambivalence biases than those from Western cultures (Chen et al., 1995). These limitations of self-report surveys might have resulted in creating artifactual differences that might have not been otherwise expected with other measurement types. Future studies may want to consider converging self-reports with other informants' reports, given that multiple methods can aid in producing comprehensive and complementary assessment results (Vazire, 2006).

Sixth, although the model showed good model fit values across different model fit indices, further model fit examination with a larger sample with a heterogenous demographic is warranted. Specifically, for the CFI model fit index, the current study used a traditional and liberal criterion to evaluate the model (i.e., CFI ≥ .90). However, considering that a value closer to 1.0 indicates a good fit, a value of CFI ≥ .95 or .97 may be needed to indicate a good fit of the model (Hu & Bentler, 1999; Schermelleh-Engel et al., 2003). With more advanced and modern model fit standards, adjustment of measurement and structural models may be needed.

Lastly, the study was designed as a cross-sectional study in which the variables are measured at the same time point (Pandis, 2014). The studies designed as cross-sectional should not indicate causal inference because they do not involve time dimensions. Also, cross-sectional studies may pose several biases such as selection bias and confounding effects. Selection bias may occur when the study participants are systematically different from the population who are not selected for the study (Pandis, 2014). For example, the sample in the current study might have had differences in important variables, compared to the population, leading to potentially biased estimates. Also, the confounding effect is an important issue in cross-sectional studies in terms that it can confuse the association among the variables (Kesmodel, 2018). Controlling potential confounders is warranted to minimize the risk of producing artifactual relationships among the variables.

Implications

Practice Implications

The research findings revealed that individuals' career preparation and outcomes are related to other psychosocial factors such as self-stigma and basic psychological needs. It indicates the service needs to help individuals deal with self-stigma and build a positive self-

concept. There are two self-stigma reduction approaches: altering stigmatizing beliefs and cognitions and encouraging individuals to develop coping skills (Mittal et al., 2012). Many experts in stigma-related research seem to have traction in the latter approach of supporting individuals to develop coping skills (Brohan et al., 2010; Luoma et al., 2008; Knight et al., 2006), given the fact that it may not be easy to challenge long trenched stigmatizing beliefs and attitudes.

Also, considering that self-stigma does not occur in a vacuum environment, but occurs in an environment filled with public stigma and discrimination, professionals' advocating role for individuals with disabilities to address systematic and attitudinal barriers should be emphasized. Advocacy on behalf of individuals with disabilities may occur in situations where professionals have access to the system or environment that the client may not have or when the client decides not to engage in advocacy due to fear of retribution or concerns about other external factors (Lewis et al., 2002). For example, counseling professionals take part in negotiating and evaluating education and community mental health systems to advocate for individuals with disabilities to receive equitable academic accommodations and mental health care that is free from public stigma and discrimination. Although professionals' advocacy on behalf of individuals with disabilities is crucial, advocacy orientation should involve the empowerment of clients, by which individuals find their voices, autonomy, and control over their lives (Lewis et al., 2002; Ratts & Hutchins, 2009).

In addition to the efforts to address self-stigma, self-determination-based interventions are encouraged to be implemented to satisfy individuals' needs in autonomy, competence, and relatedness. There has been a total of 60 self-determination-based curricula developed for transition-age individuals with disabilities teaching key self-determination skills such as

decision-making, goal setting, problem-solving, self-evaluation, and self-advocacy. (Test et al., 2000). When choosing the curriculum, practitioners' careful discretion and judgment are needed to understand whether the curriculum fits well in the setting (e.g., time and financial obligation aspects), whether the materials were field-tested before, and whether the curriculum objectives match individuals' learning needs. Also, facilitators of the interventions should have sufficient training or information on teaching self-determination skills for transition-age individuals with disabilities to competently deliver the content and provide good role modeling (Test et al., 2000).

The study findings also indicate the importance of intrinsic work motivation over extrinsic one, similar to the previous literature. The benefits of intrinsic motivation for individuals are well-documented, including self-efficacy, creativity, persistence, initiative, organization, and tolerance to stress and depression (Lei, 2010). Specific to career preparation and outcomes, there were several studies indicating that intrinsic motivation positively impacts individuals' vocational identity (Hirschi, 2010; Shin & Kelly, 2012) and career persistence (Boekeloo et al, 2015). In light of the importance of internalized motivation, it is critical to understand how to promote individuals' internalized motivation for the behaviors of interest. According to Ryan & Deci (2000), intrinsic motivation is nurtured in an environment where individuals satisfy basic psychological needs, such as autonomy, competence, and relatedness. For example, individuals are likely to endorse the behavior inward when they feel a sense of choice and volition, free from external pressure and salient rewards or threats (Ryan & Deci, 2000). Also, individuals' intrinsic motivation is dependent on the function of perceived competence; individuals are likely to enact the behavior of interest when they feel efficacious. Finally, individuals' intention to conduct the behavior of interest is influenced by the significant others to whom they feel or may want to be attached or related. When their significant others

value the behavior and there are evident supports for feelings of relatedness, individuals are more likely to internalize the behavior (Ryan & Deci, 2000). Thus, it is essential for professionals to create an environment where individuals' autonomy, competence, and relatedness are sufficiently met and supported. For example, transition-age individuals with disabilities may prefer an environment where individuals choose the career areas of their interest and make action plans to try initial job choices, free from outside regulations or forces, an environment where individuals perform behaviors that they mastered, and an environment where individuals can relate to significant others.

Although the study did not reveal the significant impact of career engagement on career outcomes, career engagement is a crucial element because it is often referred to as a visible outcome for an individual's motivation. The literature also supported that engagement represents observable, evident, and external behaviors (Martin et al., 2017; Reeve, 2012), energized by an individual's motivation (Schunk & Mullen, 2012). There are multiple necessary antecedents to promote one's engagement such as task characteristics, environmental structure, and autonomy, competence, and relatedness support. For example, engagement is likely to be enhanced when the task (a) is authentic; (b) allows individuals to have ownership of their execution and evaluation of the behavior; (c) provides opportunities to make use of their talents; (d) leads to collaboration and (e) allows enjoyment and fun (Newmann, 1991, 1992). Regarding environmental structure, individuals are likely to be more engaged when the expectations, consequences of the behavior, and work norms are clear (Connell & Wellborn, 1991; Fredricks et al., 2002). Further, individuals' basic psychological needs impact how engaged or disengaged individuals are in enacting their behaviors of interest. When individuals have the internal desire to do things instead of being externally forced to do so, they are more likely to show behavioral

(e.g., participation) and emotional engagement (e.g., interest, enjoyment; Connell & Wellborn, 1991; Patrick et al., 1993). Also, individuals are more likely to engage in behaviors of interest when their need for competence is met. It is likely to be realized in an environment in which they understand strategies for success, feel that they have control over their success experience, and believe that they have the capabilities to succeed (Connell & Wellborn, 1991; Fredricks et al., 2004). Lastly, when individuals are provided with a caring and supportive environment, they are more likely to engage in the behaviors of their interest (Fredricks et al., 2004).

To develop a supportive environment prone to individuals' engaging behavior, the collective effort of family and school is needed. For example, on the family level, parents/caregivers should convey their clear hopes and expectations for their children's academic/career trajectories (Malczyk & Lawson, 2019). In fact, previous literature found a positive association between parental expectations and individuals' academic engagement and future career activities (Hill & Wang, 2015; Mo & Singh, 2008). Also, parents monitoring achieved through regular dialogue with their children has been associated with students' engagement and academic achievement (Simons-Morton & Chen, 2009; You, 2005). On the school level, when students are provided with opportunities for voluntary choices, commitment to common goals, egalitarian decision-making, and greater individual discretion, individuals are more likely to show engaging behaviors (Fredricks et al., 2004; Lee & Smith, 1993). It may be professionals' responsibility to advocate for individuals' needs and collaboratively work with their families and schools.

Also, it is necessary for professionals to assess individuals' career-related baselines (e.g., motivation, engagement, and support systems) so that career development and preparation action plans can be customized. To measure individuals' career baseline status, multiple outcome

assessments such as psychological testing, record reviews, observations, and interviews collected by multiple informants such as individuals themselves, teachers, parents, and school/vocational rehabilitation counselors can be used (Timmons et al., 2005). This will help produce comprehensive knowledge about individuals' career-related characteristics such as interests, values, aptitudes, and skills.

Research Implications

This study has significance in that it aimed to understand the relationship among self-stigma, self-determination, and career preparation and outcomes among transition-age individuals with disabilities, which has not been a primary research topic in the field. Based on the study results, subsequent research is warranted to lead to a deeper understanding of the interrelationships among the variables as well as verification of the conceptual framework. Also, further studies will provide an opportunity to illuminate the significant or nonsignificant relationships among variables that may be shaped differently in replicated studies compared to the current study. For example, the current study did not find an indirect effect of engagement in the relationship between intrinsic work motivation and career outcomes. Future research that controls the extent to which individuals feel extant or proximal to career exploration, navigation, and decision-making might aid in finding the impact of engagement on career outcomes. Also, the current study did not find an indirect effect of relatedness in the relationship between self-stigma and intrinsic work motivation. Further exploration of the interrelationships among the variables is warranted to understand the impact of covariates in the relationship between self-stigma and intrinsic work motivation such as whether individuals are provided with a supportive and caring environment, how much they value the relatedness and connectedness with others, and how they balance fulfilling different basic psychological needs.

Moreover, the study calls for further research attempts to understand how the research model may apply to individuals with disabilities who are in different developmental stages such as those who may have established careers or started to disengage in work demands. This would enrich the discussion on career outcomes among individuals with varied developmental tasks and provide practical guidelines on how to accommodate individuals' personalized career trajectories. Furthermore, it would allow the opportunity to confirm the generalized use of the research model for different groups of individuals with disabilities.

In the methodological realm, the current study provided important directions for future research. First, an extended number of participants is needed to achieve adequate statistical precision and have reasonable power (Kline, 2023). Specifically, although the number of samples in the current study is close to the typical median sample size in education and psychology research (n = 200; MacCallum & Austin, 2000), it still may not be enough considering the number of estimated parameters in the research model. Also, the study used the same sample to verify both the measurement and structural models. To further examine the validity of the models, the model should be tested with two separate groups of samples for measurement and structural models, respectively. Further, samples from diverse backgrounds should be recruited to ensure the expandability and generalizability of the findings.

Second, further factor analysis is warranted for the measure *Self-Stigma Scale – Short Form*, considering that one of the observed items in an affective factor (i.e., I feel like I cannot do anything about my disability status) had a factor loading lower than the typical acceptable threshold (.40). Further analysis should help make sure that this does not attenuate or distort the interrelationship among the variables, especially the relationship between self-stigma and the basic psychological needs. Also, future research may want to consider expanding the Career

Engagement Scale to include cognitive (e.g., flexibility in problem-solving, preference for challenging work; Connell & Wellborn, 1991) and emotional engagement indicators (e.g., interest, boredom; Connell & Wellborn, 1991), beyond observable behavioral engagement outcomes to understand different aspects of career engagement among transition-age individuals with disabilities. This also should help provide better explanations on the current study finding that intrinsic work motivation directly impacts career outcomes, not necessarily through career engagement.

Fourth, it may be considered to revise the conceptualization of observable career outcomes represented by work experience, number of interviews, and job wages given its nonsignificant relationship with both intrinsic work motivation and engagement. For example, participants may be asked to indicate how many times they went to the career service center located in their community to ask for career-related information and resources, whether they have seen a vocational rehabilitation counselor, whether they have prepared a resume and cover letter, etc. Another way to identify the potentially significant relationship between engagement and career outcomes should be to control an individual's career developmental stage (e.g., how close/distant they feel to entering the workforce). For example, when an individual feels close to entering the workforce, the career-related activities he/she is involved in may increase, compared to when he/she feels distant from entering the workforce.

Fifth, the study results call for an intervention development that targets meeting the basic psychological needs of individuals with disabilities. Moreover, self-determination-based intervention may be likely to contribute to decreasing the level of self-stigma by empowering individuals not to agree with public stigma and discrimination. According to Raley et al.'s review study (2018), there have been a total of six self-determination curricula that were field

tested such as *Whose Future is it Anway?* (Wehmeyer et al., 2004) and *Next S.T.E.P* (Halpren et al., 2000). The common topics covered in the curriculum include (a) self- and disability awareness, (b) goal development and evaluation, (c) making a plan to achieve a goal, (d) communication, and (e) skills for an effective team member, leader, or self-advocate. More experimental studies are warranted to understand the effectiveness of the interventions. Also, it should be recognized that many of these interventions targeted participants' observable self-determination skills (e.g., goal setting, making plans, taking actions, evaluating actions); they did not target meeting individuals' basic psychological needs. Thus, the evaluation of a new/adapted intervention that targets the dual outcomes of meeting the basic psychological needs of self-determination and decreasing individuals' self-stigma should be implemented.

For an effective intervention development/adaptation, several core elements must be considered: context, theoretical framework, stakeholder engagement, uncertainties, refinement of the intervention, and economic considerations (Skivington et al., 2021). First, the effect of an intervention may be dependent on the context where the intervention takes place such as home, school, or community and the person who facilitates the intervention. Key dimensions of the contexts include physical, social, cultural, and political features of the environment where the interventions are implemented (Skivington et al., 2021). Second, the theoretical framework is crucial in articulating the key features of the interventions and mechanisms of how the features interact with each other to result in the expected outcome (Lawless et al., 2018). Also, having a theoretical framework for the intervention can promote transferring the interventions to different settings and provide strong evidence to decision-makers (Skivington et al., 2021).

Third, stakeholder engagement is crucial for developing research questions, determining the theoretical framework, choosing the research perspective, and identifying and addressing the

obstacles to evaluation and implementation (Skivington et al., 2021). In the process, researchers should be mindful of conflicts of interest among stakeholders and try to be transparent in addressing and coordinating their priorities. Fourth, key uncertainties involved in intervention development and evaluation should be addressed. The efficacy trial of an uncomplicated intervention in a controlled condition is valued and ideal; but in reality, a more flexible, inclusive, and deliberative process may be needed to suit complex research questions and diverse settings of everyday practice, albeit with less certainty and unanswered limitations (Skivington et al., 2021). Fifth, intervention refinement should be followed, which will be guided by stakeholders' opinions on the feasibility and acceptability of the interventions, theoretical framework, and policy or practice context. Lastly, economic evaluation should be conducted by identifying the costs, benefits, and consequences of implementing interventions. Specific frameworks for economic evaluation will include cost-effectiveness and cost-utility analyses (Skivington et al., 2021).

While considering the core elements for intervention development, researchers need to go through the required phases – developing/adapting a new/existing intervention, checking feasibility, evaluating an intervention, and implementing it (Skivington et al., 2021). When developing/adapting a new/existing intervention, basing it on a well-established theory is essential in determining what needs to be adapted or retained, identifying important contextual factors, and evaluating the right outcomes (Skivington et al., 2021). Feasibility testing of the intervention is now widely accepted to assess study design (e.g., recruitment, data collection, retention, and outcome analysis) and the intervention itself (e.g., content, delivery, and facilitator requirements and eligibility). During this stage, a cost-benefit analysis may be undertaken to

gauge the likelihood that the anticipated benefits of the intervention exceed the cost of the intervention.

Evaluating an intervention entails two aspects: the process and outcomes of the intervention. Process evaluation encompasses the dimensions of fidelity, quality of implementation, change mechanisms, and context (Moore et al., 2015). Also, during the evaluation of the intervention, economic cost-benefit analyses may be presented to the decision-makers to aid their decision-making on conducting an intervention (Landes et al., 2020). For outcome evaluation, researchers may want to work with stakeholders to choose the appropriate measure that shows evidence of change in participants. Finally, to implement interventions, service delivery strategies and contextual factors that support or hinder the intervention implementation need to be considered.

***Policy Implication*s**

Through the IDEA (2004) and WIOA (2014), political and legislative attention has been directed toward supporting transition-age individuals with disabilities. Yet the current study highlighted how little studies were done to understand psychosocial mechanisms of career preparation and outcomes among the population. Also, the study found the importance of addressing self-stigma and the basic psychological needs to increase individuals' intrinsic work motivation and career engagement. Federal/state support for providing counseling services to transition-age individuals with disabilities to decrease self-stigma and satisfy basic psychological needs is needed before referring the population to employment-related support services. It should be consulted whether pre-employment transition services within the WIOA can accommodate psychological testing/assessment and mental health counseling as a part of their service provision. For example, *Self-Advocacy Instruction*, one type of pre-employment transition

services, can be utilized to provide a self-determination curriculum to improve individuals' self-image, autonomous decision-making, competence, and relationship with others. There have been 60 self-determination curricula developed in far (Test et al., 2000), among which the right curriculum can be chosen to meet the unique needs of participants.

Federal support for research in this area is needed to develop, experiment, and validate the self-determination-based intervention that aims to decrease individuals' self-stigma and meet basic psychological needs (i.e., autonomy, competence, and relatedness). Although there have been a number of self-determination curricula developed, the effectiveness of these interventions was rarely evaluated and validated among the population. Also, there has not existed an intervention that specifically targeted reducing self-stigma and satisfying the basic psychological needs of determination. Thus, it is not clear yet whether many transition-age individuals with disabilities receive research-supported interventions and how beneficial the services are. Considering that conducting and evaluating a quality intervention often requires extensive effort, funding, and time, federal and state levels of support are crucial (Green & Kreuter, 2005)

To ensure the transition support team has access to research-supported intervention/resources, interprofessional and interorganizational collaboration is essential. There are four requirements to be met for fostering collective relationships among professionals or agencies (D'Amour et al., 2008): shared goals and visions, internalization, formalization, and governance. *Shared goals and visions* are defined as whether there exist common goals that take into account different motives and expectations among professionals. When professionals have a consensual goal, it will likely help harness each stakeholder's power, perspective, and expertise for collaboration. Depending on the nature of goals among professionals, it may entail a radical transformation of the existing practices of professions. Also, the structure of interests involving a

different allegiance should be considered across professionals, and mutual adjustment of goals is required. When the goals are not negotiated and shared, private interests will emerge, and client-centered collaboration will become weak.

Internalization refers to an awareness of professionals of their interdependencies, a sense of belonging, knowledge of each other's disciplines, and mutual trust, represented by bidirectional acquaintanceship and trust. *Formalization* refers to the extent to which expectations, responsibilities, procedures, and outputs are documented and communicated among professionals, indicated by formalization tools and information exchange. *Governance* is related to the leadership function, giving direction to collaborative practices, shown by centrality, leadership, support for innovation, and connectivity (D'Amour et al., 2008).

Also, technical assistance may be needed to make the resources and training opportunities available online for transition teams and individuals with disabilities. It would be especially helpful for individuals with disabilities who live in rural areas and present considerable challenges due to the lack of resources or disrupted connection between special education and employment services. To overcome such challenges, online transition assessments such as job preference and job matching assessments can be encouraged to be in use. (Morgan & Oepnshaw, 2011). The support team and individuals with disabilities may use the results to understand an individual's strengths and weaknesses, identify the best-matched job, and foresee the availability of jobs in the local job market. In addition, social network assessment can be conducted to generate an individual's existing potential connections in the community that may lead to potential employment opportunities such as friends, family, neighbors, acquaintances, etc. (Morgan & Oepnshaw, 2011). Social network mapping can be assisted by family members to generate further information on an individual's social network. Using technology, social capital

represented by social or interpersonal trust, awareness of others, and neighborliness can be best mobilized in communities to lead to better employment outcomes among transition-age individuals with disabilities.

Lastly, the translation of public policy into practice should be fostered as there continues to be a gap between public policy and practices (Rouse et al., 2000; Thurlow, 2000). For example, although the majority of the stakeholders will voice the same goal of improving career outcomes of transition-age individuals with disabilities through pre-employment transition services under the WIOA (2014), the means to achieve this goal and the ways to achieve service requirements outlined in federal policy have been varied across states and agencies (Carlson et al., 2020). There are several steps to take for seamless translation of the policy into practice (Briggs et al., 2012). First, engaging with stakeholders is critical. The working discussion among the stakeholders can ensure that the policy and recommendations are appropriate to the context, population, and organizations. Second, priorities for implementing policy should be identified. Depending on the types of services/resources or infrastructure of the organizations, contextually appropriate services/resources may be understood differently. Third, the iterative approach to identifying barriers (e.g., gaining financial support, securing sustainability) and enablers (e.g., executive support, partnerships with other organizations) for research translation into practice should be conducted. Lastly, stakeholders and agencies may provide recommendations for policy implementation. Throughout the process, establishing a group of people who share a common interest, having organizational support, integrating support from the government, developing contextual-appropriate policy, and securing seed funding to launch pilot projects may be required to facilitate policy translation to practice (Briggs et al., 2012).

Conclusion

The present research proposed a new conceptual framework for explaining career preparation and outcomes among transition-age individuals with disabilities as well as illuminated the interrelationships among psychosocial variables such as self-stigma, basic psychological needs of self-determination, intrinsic work motivation, and career engagement. The proposed conceptual framework showed a good model fit in explaining the psychosocial mechanisms that impact career preparedness and outcomes among transition-age individuals with disabilities. Also, the study revealed a significant indirect effect of basic psychological needs such as autonomy and competence in the relationship between self-stigma and intrinsic work motivation and a significant direct effect of intrinsic work motivation on career engagement and career achievability.

The current study bears important implications for practice, research, and policy. On a practice level, it informs the need for practitioners to help transition-age individuals with disabilities have a positive self-concept by decreasing self-stigma and meeting basic psychological needs. Also, practitioners can advocate for systematic barrier breakdown for individuals with disabilities considering that self-stigma does not occur in a vacuum environment, but occurs in an environment filled with public stigma, prejudices, and discrimination. On a research level, further efforts to evaluate and verify the conceptual framework with an expanded sample are necessary. Also, given the importance of basic psychological needs, it is worth considering developing a self-determination-based intervention for the population that targets self-stigma reduction, positive self-concept formulation, and empowerment. Lastly, on a policy level, it should be consulted on how research-informed policy can be translated into practice. For the seamless translation of political recommendation into

practice, engagement with stakeholders, setting priorities for implementing policy, securing federal/state support, and developing contextual-appropriate accommodations should be considered.

REFERENCES

Ab Hamid, M. R., Sami, W., & Sidek, M. M. (2017). Discriminant validity assessment: Use of Fornell & Larcker criterion versus HTMT criterion. *Journal of Physics, 890*(1), Article 012163. https://doi.org/10.1088/1742-6596/890/1/012163

Ahern, J., Stuber, J., & Galea, S. (2007). Stigma, discrimination and the health of illicit drug users. *Drug and Alcohol Dependence*, *88*(2), 188–196. https://doi.org/10.1016/j.drugalcdep.2006.10.014

Akkerman, A., Kef, S., & Meininger, H. P. (2018). Job satisfaction of people with intellectual disabilities: The role of basic psychological need fulfillment and workplace participation. *Disability and Rehabilitation*, *40*(10), 1192-1199. https://doi.org/10.1080/09638288.2017.1294205

Anderson, J. C., & Gerbing, D. W. (1984). The effect of sampling error on convergence, improper solutions, and goodness-of-fit indices for maximum likelihood confirmatory factor analysis. *Psychometrika*, *49*, 155-173.

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin, 103*(3), 411-423. https://doi.org/10.1037/0033-2909.103.3.411

Algozzine, B., Browder, D., Karvonen, M., Test, D. W., & Wood, W. M. (2001). Effects of interventions to promote self-determination for individuals with disabilities. *Review of Educational Research*, *71*(2), 219–277. https://doi.org/10.3102/00346543071002219

Awang, Z. (2014). Validating the measurement model: CFA. In Z. Awang (Ed.), *A handbook on structural equation modeling* (pp. 54-73). MPWS Rich Resources.

Bakker, A. B., & Oerlemans, W. G. (2019). Daily job crafting and momentary work engagement: A self-determination and self-regulation perspective. *Journal of Vocational Behavior*, *112*, 417-430. https://doi.org/10.1016/j.jvb.2018.12.005

Balcazar, F. E., Majors, R., Blanchard, K. A., Paine, A. L., Suarez Balcazar, Y., Fawcett, S. B., Murphy, R., & Meyer, J. (1991). Teaching minority high school students to recruit helpers to attain personal and educational goals. *Journal of Behavioral Education, 1*(4), 445-454.

Baluku, M. M., Mugabi, E. N., Nansamba, J., Matagi, L., Onderi, P., & Otto, K. (2021). Psychological capital and career outcomes among final year university students: The mediating role of career engagement and perceived employability. I*nternational Journal of Applied Positive Psychology, 6*, 55-80. https://doi.org/10.1007/s41042-020-00040-w

Bambara, L. M., & Ager, C. (1992). Using self-scheduling to promote self-directed leisure activity in home and community settings. *Journal of the Association for Persons with Severe Handicaps*, *17*(2), 67-76. https://doi.org/10.1177/154079699201700201

Bandura, A. (1994). Self-efficacy. In V. S. Ramachaudran (Ed.), *Encyclopedia of human behavior* (Vol. 4, pp. 71-81). Academic Press. (Reprinted in H. Friedman [Ed.], *Encyclopedia of mental health*. Academic Press, 1998).

Barta, T., & Kiropoulos, L. (2023). The Mediating Role of Stigma, internalized shame, and Autonomous Motivation in the relationship between Depression, anxiety, and psychological help-seeking attitudes in multiple sclerosis. *International Journal of Behavioral Medicine, 30*(1), 133-145. https://doi.org/10.1007/s12529-022-10078-6

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin, 107*(2), 238–246. https://doi.org/10.1037/0033-2909.107.2.238

Benz, M. R., Lindstrom, L., & Yovanoff, P. (2000). Improving graduation and employment outcomes of students with disabilities: Predictive factors and student perspectives. *Exceptional Children, 66*(4), 509-529. https://doi.org/10.1177/001440290006600405

Benz, M. R., Yovanoff, P., & Doren, B. (1997). School-to-work components that predict postschool success for students with and without disabilities. *Exceptional Children, 63*(2), 151–165. https://doi.org/10.1177/001440299706300201

Berndt, A. E. (2020). Sampling methods. *Journal of Human Lactation, 36*(2), 224-226. https://doi.org/10.1177/0890334420906850

Berne, P., Morales, A. L., Langstaff, D., & Invalid, S. (2018). Ten principles of disability justice. *WSQ: Women's Studies Quarterly, 46*(1), 227-230. https://doi.org/10.1353/wsq.2018.0003

Berry, H. G., Ward, M., & Caplan, L. (2012). Self-determination and access to postsecondary education in transitioning youths receiving supplemental security income benefits. *Career Development and Transition for Exceptional Individuals, 35*(2), 68–75. https://doi.org/10.1177/0885728811422230

Boekeloo, B. O., Jones, C., Bhagat, K., Siddiqui, J., & Wang, M. Q. (2015). The role of intrinsic motivation in the pursuit of health science-related careers among youth from underrepresented low socioeconomic populations. *Journal of Urban Health, 92*(5), 980-994. https://doi.org/10.1007/s11524-015-9987-7

Bowlby, J. (1979). The bowlby-ainsworth attachment theory. *Behavioral and Brain Sciences, 2*(4), 637-638.

Briggs, A. M., Bragge, P., Slater, H., Chan, M., & Towler, S. C. (2012). Applying a Health Network approach to translate evidence-informed policy into practice: A review and case study on musculoskeletal health. *BMC Health Services Research, 12*(394), 1-12.

Brohan, E., Elgie, R., Sartorius, N., Thornicroft, G., & GAMIAN-Europe Study Group. (2010). Self-stigma, empowerment and perceived discrimination among people with schizophrenia in 14 European countries: The GAMIAN-Europe study. *Schizophrenia Research, 122*(1-3), 232-238. https://doi.org/10.1016/j.schres.2010.02.1065

Brohan, E., Slade, M., Clement, S., & Thornicroft, G. (2010). Experiences of mental illness stigma, prejudice and discrimination: A review of measures. *BMC Health Services Research 10*(80), 1-11.

Brown, R. P., & Lee, M. N. (2005). Stigma consciousness and the race gap in college academic achievement. *Self and Identity*, *4*(2), 149-157. https://doi.org/10.1080/13576500444000227

Byrne, B. M. (2010). *Structural equation modeling with AMOS: Basic concepts, applications, and programming.* Taylor and Francis Group Publication.

Bullis, M., & Davis, C. (1995). Transition achievement among young adults with deafness: What variables relate to success? *Rehabilitation Counseling Bulletin*, *39*(2), 130-150.

Burgstahler, S. (2003). The role of technology in preparing youth with disabilities for postsecondary education and employment. *Journal of Special Education Technology*, *18*(4), 7–19. https://doi.org/10.1177/016264340301800401

Byrd, K. R., Hageman, A., & Isle, D. B. (2007). Intrinsic motivation and subjective well-being: The unique contribution of intrinsic religious motivation. *The International Journal for the Psychology of Religion, 17*(2), 141-156. https://doi.org/10.1080/10508610701244155

Cabrera-Nguyen, E.P. (2010) Author guidelines for reporting scale development and validation results in the journal of the society for social work and research. *Journal of the Society for Social Work and Research, 1*(2), 99-103. https://doi.org/10.5243/jsswr.2010.8

Caqueo-Urízar, A., Urzúa, A., Habib, J., Loundou, A., Boucekine, M., Boyer, L., & Fond, G. (2020). Relationships between social stigma, stigma experience and self-stigma and impaired quality of life in schizophrenia across three Latin-American countries. *European Archives of Psychiatry and Clinical Neuroscience*, *270*(5), 513–520. https://doi.org/10.1007/s00406-019-01035-8

Carlson, S. R., Thompson, J. R., & Monahan, J. (2020). An analysis of state pre-employment transition services policies. *Journal of Vocational Rehabilitation*, *52*(1), 43-59. https://doi.org/10.3233/JVR-191059

Carter, E. W., Austin, D., & Trainor, A. A. (2012). Predictors of postschool employment outcomes for young adults with severe disabilities. *Journal of Disability Policy Studies, 23*(1), 50–63. https://doi.org/10.1177/1044207311414680

Carter, E. W., Ditchman, N., Sun, Y., Trainor, A. A., Swedeen, B., & Owens, L. (2010). Summer employment and community experiences of transition-age youth with severe disabilities. *Exceptional Children*, *76*(2), 194–212. https://doi.org/10.1177/001440291007600204

Cavelti, M., Kvrgic, S., Beck, E.-M., Rüsch, N., & Vauth, R. (2012). Self-stigma and its relationship with insight, demoralization, and clinical outcome among people with schizophrenia spectrum disorders. *Comprehensive Psychiatry*, *53*(5), 468–479. https://doi.org/10.1016/j.comppsych.2011.08.001

Çetin, F., & Aşkun, D. (2018). The effect of occupational self-efficacy on work performance through intrinsic work motivation. *Management Research Review*, *41*(2), 186-201. https://doi.org/10.1108/MRR-03-2017-0062

Chan, F., Chronister, J., & Cardoso, E. d. S. (2009). An introduction to evidence-based practice approach to psychosocial interventions for people with chronic illness and disability. In F. Chan, E. Da Silva Cardoso, & J. A. Chronister (Eds.), *Understanding psychosocial adjustment to chronic illness and disability: A handbook for evidence-based practitioners in rehabilitation* (pp. 3–19). Springer Publishing Company.

Chan, Y., Chan, Y. Y., Cheng, S. L., Chow, M. Y., Tsang, Y. W., Lee, C., & Lin, C.-Y. (2017). Investigating quality of life and self-stigma in Hong Kong children with specific learning disabilities. *Research in Developmental Disabilities*, *68*, 131–139. https://doi.org/10.1016/j.ridd.2017.07.014

Chen, B., Vansteenkiste, M., Beyers, W., Boone, L., Deci, E. L., Van der Kaap-Deeder, J., Duriez, B., Lens, W., Matos, L., Mouratidis, A., Ryan, R. M., Sheldon, K. M., Soenens, B., Van Petegem, S., & Verstuyf, J. (2015). Basic psychological need satisfaction, need frustration, and need strength across four cultures. *Motivation and Emotion*, *39*(2), 216–236. https://doi.org/10.1007/s11031-014-9450-1

Chen, C., Lee, S. Y., & Stevenson, H. W. (1995). Response style and cross-cultural comparisons of rating scales among East Asian and North American students. *Psychological Science, 6*(3), 170-175. https://doi.org/10.1111/j.1467-9280.1995.tb00327.x

Cmar, J. L., McDonnall, M. C., & Markoski, K. M. (2018). In-school predictors of postschool employment for youth who are deaf-blind. *Career Development and Transition for Exceptional Individuals*, *41*(4), 223–233. https://doi.org/10.1177/2165143417736057

Cocks, E., Thoresen, S. H., & Lee, E. A. L. (2015). Pathways to employment and quality of life for apprenticeship and traineeship graduates with disabilities. *International Journal of Disability, Development and Education*, *62*(4), 422–437. https://doi.org/10.1080/1034912X.2015.1025714

Connell, J. P., & Wellborn, J. G. (1991). Competence, autonomy, and relatedness: A motivational analysis of self-system processes. In M. Gunnar & L. A. Sroufe (Eds.), *Minnesota Symposium on Child Psychology* (Vol. 23). University of Chicago Press

Connelly, L. M. (2016). Cross-sectional survey research. *Medsurg Nursing*, *25*(5), 369-370.

Corrigan, P. (2004). How stigma interferes with mental health care. *American Psychologist*, *59*(7), 614-625. https://doi.org/10.1037/0003-066X.59.7.614

Corrigan, P. W., Bink, A. B., Schmidt, A., Jones, N., & Rüsch, N. (2016). What is the impact of self-stigma? Loss of self-respect and the "why try" effect. *Journal of Mental Health*, *25*(1), 10-15. https://doi.org/10.3109/09638237.2015.1021902

Corrigan, P. W., Kerr, A., & Knudsen, L. (2005). The stigma of mental illness: Explanatory models and methods for change. *Applied and Preventive Psychology*, *11*(3), 179-190. https://doi.org/10.1016/j.appsy.2005.07.001

Corrigan, P. W., Kosyluk, K. A., & Rüsch, N. (2013). Reducing self-stigma by coming out proud. *American Journal of Public Health*, *103*(5), 794-800. https://doi.org/10.2105/AJPH.2012.301037

Corrigan, P. W., Larson, J. E., & Ruesch, N. (2009). Self-stigma and the "why try" effect: impact on life goals and evidence-based practices. *World Psychiatry*, *8*(2), 75-81. https://doi.org/10.1002%2Fj.2051-5545.2009.tb00218.x

Corrigan, P. W., Rafacz, J., & Rüsch, N. (2011). Examining a progressive model of self-stigma and its impact on people with serious mental illness. *Psychiatry Research*, *189*(3), 339-343. https://doi.org/10.1016/j.psychres.2011.05.024

Corrigan, P. W., Watson, A. C., & Barr, L. (2006). The self-stigma of mental illness: Implications for self-esteem and self-efficacy. *Journal of Social and Clinical Psychology*, *25*(8), 875-884. https://doi.org/10.1521/jscp.2006.25.8.875

Corrigan, P. W., Watson, A. C., Byrne, P., & Davis, K. E. (2005). Mental illness stigma: Problem of public health or social justice?. *Social Work*, *50*(4), 363-368.

Cox, A., Duncheon, N., & McDavid, L. (2009). Peers and teachers as sources of relatedness perceptions, motivation, and affective responses in physical education. *Research Quarterly for Exercise and Sport*, *80*(4), 765-773.

Cronbach, L. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika,* 16, 297–334. https://doi.org/10.1007/BF02310555

D'amour, D., Goulet, L., Labadie, J. F., Martín-Rodriguez, L. S., & Pineault, R. (2008). A model and typology of collaboration between professionals in healthcare organizations. *BMC Health Services Research*, *8*(188), 1-14. https://doi.org/10.1186/1472-6963-8-188

deCharms, R., & Muir, M. S. (1978). Motivation: Social approaches. *Annual Review of Psychology*, *29*(1), 91-113.

Deci, E. L., Hodges, R., Pierson, L., & Tomassone, J. (1992). Autonomy and competence as motivational factors in students with learning disabilities and emotional handicaps. *Journal of Learning Disabilities*, *25*(7), 457-471. https://doi.org/10.1177/002221949202500706

Deci, E. L., Koestner, R., & Ryan, R. M. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin*, *125*(6), 627-668. https:/doi.org /10.1037/0033-2909.125.6.627

Deci, E. L., & Ryan, R. M. (1980). The empirical exploration of intrinsic motivational processes. In *Advances in Experimental Social Psychology* (Vol. 13, pp. 39–80). Elsevier. https://doi.org/10.1016/S0065-2601(08)60130-6

Deci, E. L., & Ryan, R. M. (1985). The general causality orientations scale: Self-determination in personality. *Journal of Research in Personality*, *19*(2), 109-134. https://doi.org/10.1016/0092-6566(85)90023-6

Deci, E. L., & Ryan, R. M. (2000). The "What" and "Why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01

Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macrotheory of human motivation, development, and health. *Canadian Psychology / Psychologie Canadienne*, *49*(3), 182–185. https://doi.org/10.1037/a0012801

Deci, E. L., & Ryan, R. M. (2012). Motivation, personality, and development within embedded social contexts: An overview of self-determination theory. In R.M. Ryan (Eds.), *The oxford handbook of human behavior* (pp. 85-110). Oxford Library of Psychology.

Deci, E. L., & Ryan, R. M. (2016). Optimizing students' motivation in the era of testing and pressure: A self-determination theory perspective. In L. W. Chia, J. W. C Keng, & R. M. Ryan (Eds.), *Building autonomous learners: Perspectives from research and practice using self-determination theory* (pp. 9-29). Springer.

Denenny, D., Thompson, E., Pitts, S. C., Dixon, L. B., & Schiffman, J. (2015). Subthreshold psychotic symptom distress, self-stigma, and peer social support among college students with mental health concerns. *Psychiatric Rehabilitation Journal*, *38*(2), 164–170. https://doi.org/10.1037/prj0000124

De Vos, A., & Soens, N. (2008). Protean attitude and career success: The mediating role of self-management. *Journal of Vocational Behavior*, *73*(3), 449-456. https://doi.org/10.1016/j.jvb.2008.08.007

Ditchman, N., Werner, S., Kosyluk, K., Jones, N., Elg, B., & Corrigan, P. W. (2013). Stigma and intellectual disability: Potential application of mental illness research. *Rehabilitation Psychology*, *58*(2), 206-216. https://doi.org/0.1037/a0032466

Dong, Y., & Peng, C. Y. J. (2013). Principled missing data methods for researchers. *SpringerPlus*, *2*(1), 1-17. https://doi.org/10.1186/2193-1801-2-222

Dörnyei, Z., & Ushioda, E. (2011). *Teaching and Researching Motivation* (2nd ed). Longman/Pearson.

Elliot, A. J., & Reis, H. T. (2003). Attachment and exploration in adulthood. *Journal of Personality and Social Psychology*, *85*(2), 317–331. https://doi.org/10.1037/0022-3514.85.2.317

Enders, C. K., & Bandalos, D. L. (2001). The relative performance of full information maximum likelihood estimation for missing data in structural equation models. *Structural Equation Modeling, 8*(3), 430-457. https://doi.org/10.1207/S15328007SEM0803_5

Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics, 5*(1), 1-4. https://doi.org/10.11648/j.ajtas.20160501.11

Evans, J., & Repper, J. (2000). Employment, social inclusion and mental health. *Journal of Psychiatric and Mental Health Nursing*, *7*(1), 15–24. https://doi.org/10.1046/j.1365-2850.2000.00260.x

Eyal, O., & Roth, G. (2011). Principals' leadership and teachers' motivation: Self-determination theory analysis. *Journal of Educational Administration*, *49*(3), 256-275. https://doi.org/10.1108/09578231111129055

Fabian, E. S. (2007). Urban youth with disabilities: Factors affecting transition employment. *Rehabilitation Counseling Bulletin, 50*(3), 130–138. https://doi.org/10.1177/00343552070500030101

Fabian, E.S., & Pebdani, R. (2013). The career development of youth and young adults with disabilities. In S.D. Brwon & R.W. Lent (Eds.), *Career development and counseling: Putting theory and research to work* (pp. 357- 386). John Wiley & Sons.

Fan, X., Thompson, B., & Wang, L. (1999). Effects of sample size, estimation methods, and model specification on structural equation modeling fit indexes. *Structural Equation Modeling: A Multidisciplinary Journal, 6*(1), 56-83. https://doi.org/10.1080/10705519909540119

Fan, X., Miller, B. C., Park, K. E., Winward, B. W., Christensen, M., Grotevant, H. D., & Tai, R. H. (2006). An exploratory study about inaccuracy and invalidity in adolescent self-report surveys. *Field Methods, 18*(3), 223-244. https://doi.org/10.1177/152822X06289161

Fernet, C., & Austin, S. (2014). Self-determination and job stress. In M. Gagné (Ed.), *The oxford handbook of work engagement, motivation, and self-determination theory* (pp. 231- 244). Oxford Library of Psychology.

Fernet, C., Guay, F., & Senécal, C. (2004). Adjusting to job demands: The role of work self-determination and job control in predicting burnout. *Journal of Vocational Behavior*, *65*(1), 39-56. https://doi.org/10.1016/S0001-8791(03)00098-8

Festinger, L. (1957). *A theory of cognitive dissonance.* Stanford University Press.

Field, S., Sarver, M. D., & Shaw, S. F. (2003). Self-determination: A key to success in postsecondary education for students with learning disabilities. *Remedial and Special Education*, *24*(6), 339–349. https://doi.org/10.1177/07419325030240060501

Fine, M., & Asch, A. (1988). Disability beyond stigma: Social Interaction, discrimination, and activism. *Journal of Social Issues*, *44*(1), 3–21. https://doi.org/10.1111/j.1540-4560.1988.tb02045.x

Finn, J. D., & Zimmer, K. S. (2012). Student engagement: What is it? Why does it matter?. In S.L. Christenson, A.L.Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 97-131). Springer.

Fleming, A. R., Plotner, A. J., & Oertle, K. M. (2017). College students with disabilities: The relationship between student characteristics, the academic environment, and performance. *Journal of Postsecondary Education and Disability*, *30*(3), 209-221.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39-50. https://doi.org/10.1177/002224378101800104

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 74*(1), 59-109. https://doi.org/10.3102/00346543074001059

Fredricks, J. A., & Eccles, J. S. (2002). Children's competence and value beliefs from childhood through adolescence: Growth trajectories in two male-sex-typed domains. *Developmental Psychology, 38*(4), 519–533. https://doi.org/10.1037/0012-1649.38.4.519

Fung, K. M. T., Tsang, H. W. H., & Cheung, W. (2011). Randomized controlled trial of the self-stigma reduction program among individuals with schizophrenia. *Psychiatry Research, 189*(2), 208–214. https://doi.org/10.1016/j.psychres.2011.02.013

Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior*, *26*(4), 331–362. https://doi.org/10.1002/job.322

Gagné, M., Forest, J., Vansteenkiste, M., Crevier-Braud, L., van den Broeck, A., Aspeli, A. K., Bellerose, J., Benabou, C., Chemolli, E., Güntert, S. T., Halvari, H., Indiyastuti, D. L., Johnson, P. A., Molstad, M. H., Naudin, M., Ndao, A., Olafsen, A. H., Roussel, P., Wang, Z., & Westbye, C. (2015). The multidimensional work motivation scale: Validation evidence in seven languages and nine countries. *European Journal of Work and Organizational Psychology*, *24*(2), 178–196. https://doi.org/10.1080/1359432X.2013.877892

Gallagher, D., Ting, L., & Palmer, A. (2008). A journey into the unknown; taking the fear out of structural equation modeling with AMOS for the first-time user. *The Marketing Review*, *8*(3), 255-275. https://doi.org/10.1362/146934708X337672

Garberoglio, C. L., Schoffstall, S., Cawthon, S., Bond, M., & Ge, J. (2014). The role of self-beliefs in predicting postschool outcomes for deaf young adults. *Journal of Developmental and Physical Disabilities*, *26*(6), 667-688. https://doi.org/10.1007/s10882-014-9388-y

Garrels, V., & Arvidsson, P. (2019). Promoting self-determination for students with intellectual disability: A Vygotskian perspective. *Learning, Culture and Social Interaction, 22*, 100241. https://doi.org /10.1016/j.lcsi.2018.05.006

Getzel, E. E., & Thoma, C. A. (2008). Experiences of college students with disabilities and the importance of self-determination in higher education settings. *Career Development for Exceptional Individuals, 31*(2), 77–84. https://doi.org/10.1177/0885728808317658

Goffman, E. (1997). Selections from stigma. In L. J. Davis (Ed.), *The disability studies reader* (2nd ed., pp. 131-153). Routledge.

Goffman, E. (2005). The presentation of self in everyday life. In D. Brissett & C. Edgley. (Ed.), *Life as theater: A dramaturgical sourcebook,* (2nd ed., pp. 129-139). Routledge.

Gil, L. A. (2007). Bridging the transition gap from high school to college; preparing students with disabilities for a successful postsecondary experience. *Teaching Exceptional Children, 40*(2), 12-15. https://doi.org/10.1177/004005990704000202

Glass, J. E., Mowbray, O. P., Link, B. G., Kristjansson, S. D., & Bucholz, K. K. (2013). Alcohol stigma and persistence of alcohol and other psychiatric disorders: A modified labeling theory approach. *Drug and Alcohol Dependence*, *133*(2), 685-692. https://doi.org/10.1016/j.drugalcdep.2013.08.016

Grant, A. M. (2008). Does intrinsic motivation fuel the prosocial fire? Motivational synergy in predicting persistence, performance, and productivity. *Journal of Applied Psychology, 93*(1), 48–58. https://doi.org/10.1037/0021-9010.93.1.48

Green, L. & Kreuter, M. (2005) *Health program planning: An educational and ecological approach* (4th ed.). McGraw Hill.

Green, S., Davis, C., Karshmer, E., Marsh, P., & Straight, B. (2005). Living stigma: The impact of labeling, stereotyping, separation, status loss, and discrimination in the lives of individuals with disabilities and their families. *Sociological Inquiry, 75*(2), 197-215. https://doi.org/10.1111/j.1475-682X.2005.00119.x

Green, S. B., Thompson, M. S., & Babyak, M. A. (1998). A Monte Carlo investigation of methods for controlling Type I errors with specification searches in structural equation modeling. *Multivariate Behavioral Research, 33*(3), 365-383.

Green, S. E. (2004). The impact of stigma on maternal attitudes toward placement of children with disabilities in residential care facilities. *Social Science & Medicine, 59*(4), 799–812. https://doi.org/10.1016/j.socscimed.2003.11.023

Grigal, M., Neubert, D. A., Moon, M. S., & Graham, S. (2003). Self-determination for students with disabilities: Views of parents and teachers. *Exceptional Children, 70*(1), 97–112. https://doi.org/10.1177/001440290307000106

Groce, N.E. (2004). Adolescents and youth with disability: Issues and challenges. *Asia Pacific Disability Rehabilitation Journal*, *15*(2), 13- 32.

Guarneri, J. A., Oberleitner, D. E., & Connolly, S. (2019). Perceived stigma and self-stigma in college students: A literature review and implications for practice and research. *Basic and Applied Social Psychology*, *41*(1), 48-62. https://doi.org/10.1080/01973533.2018.1550723

Gunzler, D., Chen, T., Wu, P., & Zhang, H. (2013). Introduction to mediation analysis with structural equation modeling. *Shanghai Archives of Psychiatry*, *25*(6), 390-394. https://doi.org/10.3969/j.issn.1002-0829.2013.06.009

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1995). *Multivariate data analysis*. Prentice-Hall.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis: A global perspective*. Prentice Hall.

Hair, J. F., Hult, G. T. M., Ringle, C., Sarstedt, M. (2014). *A primer on partial least squares structural equation modeling (PLS-SEM)*. SAGE Publications.

Halpern, A. S., Herr, C. M., Doren, B., & Wolf, N. K. (2000). *NEXT S.T.E.P.: Student Transition and Educational Planning* (2nd ed.). Pro-Ed

Halpern, A. S., Yovanoff, P., Doren, B., & Benz, M. R. (1995). Predicting participation in postsecondary education for school leavers with disabilities. *Exceptional Children*, *62*(2), 151–164. https://doi.org/10.1177/001440299506200205

Hammarlund, R., Crapanzano, K., Luce, L., Mulligan, L., & Ward, K. (2018). Review of the effects of self-stigma and perceived social stigma on the treatment-seeking decisions of individuals with drug- and alcohol-use disorders. *Substance Abuse and Rehabilitation*, *9*, 115–136. https://doi.org/10.2147/SAR.S183256

Hamann, J., Bühner, M., & Rüsch, N. (2017). Self-stigma and consumer participation in shared decision making in mental health services. *Psychiatric Services*, *68*(8), 783–788. https://doi.org/10.1176/appi.ps.201600282

Harackiewicz, J. M., Manderlink, G., & Sansone, C. (1984). Rewarding pinball wizardry: The effects of evaluation on intrinsic interest. *Journal of Personality and Social Psychology, 47*, 287–300.

Hatzenbuehler, M. L., & Link, B. G. (2014). Introduction to the special issue on structural stigma and health. *Social Science & Medicine*, *103*, 1-6. https://doi.org/10.1016/j.socscimed.2013.12.017

Hazen, N. L., & Durrett, M. E. (1982). Relationship of security of attachment to exploration and cognitive mapping abilities in 2-year-olds. *Developmental Psychology*, *18*(5), 751–759. https://doi.org/10.1037/0012-1649.18.5.751

Heyman, G. D., & Dweck, C. S. (1992). Achievement goals and intrinsic motivation: Their relation and their role in adaptive motivation. *Motivation and Emotion*, *16*, 231-247.

Heyman, W. B. (1990). The self-perception of a learning disability and its relationship to academic self-concept and self-esteem. *Journal of Learning Disabilities*, *23*(8), 472–475. https://doi.org/10.1177/002221949002300804

Hielscher, E., & Waghorn, G. (2017). Self-stigma and fears of employment among adults with psychiatric disabilities. *British Journal of Occupational Therapy*, *80*(12), 699–706. https://doi.org/10.1177/0308022617712199

Hill, N., & Wang, M. (2015). From middle school to college: Developing aspirations, promoting engagement, and indirect pathways from parenting to post high school enrollment. *Developmental Psychology, 51*(2), 224–235. https://doi.org/10.1037/a0038367

Hirschi, A. (2010). Positive adolescent career development: The role of intrinsic and extrinsic work values. *The Career Development Quarterly, 58*(3), 276-287. https://doi.org/10.1002/j.2161-0045.2010.tb00193.x

Hirschi, A., Freund, P. A., & Herrmann, A. (2014). The career engagement scale: Development and validation of a measure of proactive career behaviors. *Journal of Career Assessment, 22*(4), 575-594. https://doi.org/10.1177/1069072713514813

Hirschi, A., Lee, B., Porfeli, E. J., & Vondracek, F. W. (2013). Proactive motivation and engagement in career behaviors: Investigating direct, mediated, and moderated effects. *Journal of Vocational Behavior, 83*(1), 31-40. https://doi.org/10.1016/j.jvb.2013.02.003

Hong, Y. R., & Park, J. S. (2012). Impact of attachment, temperament and parenting on human development. *Korean Journal of Pediatrics, 55*(12), 449-454. https://doi.org/10.3345%2Fkjp.2012.55.12.449

Hooper, D., Coughlan, J. and Mullen, M. R. (2008). Structural equation modelling: Guidelines for determining model fit. *The Electronic Journal of Business Research Methods*, *6*(1), 53-60.

Hout, M. (2012). Social and economic returns to college education in the United States. *Annual Review of Sociology, 38*, 379-400. https://doi.org/10.1146/annurev.soc.012809.102503

Hoyle, R. H. (1995). *Structural equation modeling: Concepts, issues, and applications*. Sage.

Hu, L. T., & Bentler, P.M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*(1), 1-55.

Individuals with Disabilities Education Act of 2004, Pub.L. No. 101-476, 104 Stat.1142 (2004). https://sites.ed.gov/idea/statute-chapter-33/subchapter-ii

Jackson, D. L. (2003). Revisiting sample size and number of parameter estimates: Some support for the N: q hypothesis. *Structural Equation Modeling, 10*(1), 128-141. https://doi.org/10.1207/S15328007SEM1001_6

Jackson, D. L., Voth, J., & Frey, M. P. (2013). A note on sample size and solution propriety for confirmatory factor analytic models. *Structural Equation Modeling: A Multidisciplinary Journal, 20*(1), 86-97. https://doi.org/10.1080/10705511.2013.742388

Jager, J., Putnick, D. L., & Bornstein, M. H. (2017). II. More than just convenient: The scientific merits of homogeneous convenience samples. *Monographs of the Society for Research in Child Development, 82*(2), 13-30. https://doi.org/10.1111/mono.12296

Jahoda, A., & Markova, I. (2004). Coping with social stigma: People with intellectual disabilities moving from institutions and family home. *Journal of Intellectual Disability Research, 48*(8), 719–729. https://doi.org/10.1111/j.1365-2788.2003.00561.x

Jak, S., Jorgensen, T. D., Verdam, M. G., Oort, F. J., & Elffers, L. (2021). Analytical power calculations for structural equation modeling: A tutorial and Shiny app. *Behavior Research Methods, 53*, 1385-1406. https://doi.org/10.3758/s13428-020-01479-0

Jameson, D. R. (2007). Self-determination and success outcomes of two-year college students with disabilities. *Journal of College Reading and Learning, 37*(2), 26–46. https://doi.org/10.1080/10790195.2007.10850196

Jöreskog, K. G., & Sörbom, D. (1993). *LISREL 8: Structural equation modeling with the SIMPLIS command language*. Scientific Software International.

Kamaradova, D., Latalova, K., Prasko, J., Kubinek, R., Vrbova, K., Mainerova, B., Cinculova, A., Ociskova, M., Holubova, M., Smoldasova, J., & Tichackova, A. (2016). Connection between self-stigma, adherence to treatment, and discontinuation of medication. *Patient Preference and Adherence, 10*, 1289-1298. https://doi.org/10.2147/PPA.S99136

Kasser, T., & Ryan, R. M. (1996). Further examining the American dream: Differential correlates of intrinsic and extrinsic goals. *Personality and Social Psychology Bulletin, 22*(3), 280–287. https://doi.org/10.1177/0146167296223006

Kaufman, A., & Dodge, T. (2009). Student perceptions and motivation in the classroom: Exploring relatedness and value. *Social Psychology of Education, 12*, 101-112. https://doi.org/10.1007/s11218-008-9070-2

Kesmodel, U. S. (2018). Cross-sectional studies–what are they good for?. *Acta Obstetricia et Gynecologica Scandinavica, 97*(4), 388-393. https://doi.org/10.1111/aogs.13331

Kleim, B., Vauth, R., Adam, G., Stieglitz, R. D., Hayward, P., & Corrigan, P. (2008). Perceived stigma predicts low self-efficacy and poor coping in schizophrenia. *Journal of Mental Health, 17*(5), 482-491. https://doi.org/10.1080/09638230701506283

Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). Guilford Press.

Kline, R. B. (2023). *Principles and practice of structural equation modeling* (5th ed.). Guilford Press.

Knight, M. T., Wykes, T., & Hayward, P. (2006). Group treatment of perceived stigma and self-esteem in schizophrenia: a waiting list trial of efficacy. *Behavioural and Cognitive Psychotherapy*, *34*(3), 305-318. https://doi.org/10.1017/S1352465805002705

Koestner, R., & Losier, G. F. (2002). Distinguishing three ways of being highly motivated: A closer look at introjection, identification, and intrinsic motivation. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 101–121). University of Rochester Press.

Kong, L., Gao, Z., Xu, N., Shao, S., Ma, H., He, Q., Zhang, D., Xu, H., & Qu, H. (2021). The relation between self-stigma and loneliness in visually impaired college students: Self-acceptance as mediator. *Disability and Health Journal*, *14*(2), 101054. https://doi.org/j.dhjo.2020.101054

Konrad, A. M., Moore, M. E., Ng, E. S. W., Doherty, A. J., & Breward, K. (2013). Temporary work, underemployment and workplace accommodations: Relationship to well-being for workers with disabilities. *British Journal of Management*, *24*(3), 367–382. https://doi.org/10.1111/j.1467-8551.2011.00809.x

Konrad, M., Fowler, C. H., Walker, A. R., Test, D. W., & Wood, W. M. (2007). Effects of self-determination interventions on the academic skills of students with learning disabilities. *Learning Disability Quarterly*, *30*(2), 89-113. https://doi.org/10.2307/30035545

Kroska, A., & Harkness, S. K. (2006). Stigma sentiments and self-meanings: Exploring the modified labeling theory of mental illness. *Social Psychology Quarterly*, *69*(4), 325-348. https://doi.org/10.1177/019027250606900403

Lachapelle, Y., Wehmeyer, M. L., Haelewyck, M.-C., Courbois, Y., Keith, K. D., Schalock, R., Verdugo, M. A., & Walsh, P. N. (2005). The relationship between quality of life and self-determination: An international study. *Journal of Intellectual Disability Research*, *49*(10), 740–744. https://doi.org/10.1111/j.1365-2788.2005.00743.x

Landes, S. J., McBain, S. A., & Curran, G. M. (2020). An introduction to effectiveness-implementation hybrid designs. *Psychiatry Research*, *283*, 112630. https://doi.org/10.1016/j.psychres.2019.112513

Lannin, D. G., Vogel, D. L., Brenner, R. E., Abraham, W. T., & Heath, P. J. (2016). Does self-stigma reduce the probability of seeking mental health information?. *Journal of Counseling Psychology*, *63*(3), 351-358. https://doi.org/10.1037/cou0000108

Larkin, P., Jahoda, A., MacMahon, K., & Pert, C. (2012). Interpersonal sources of conflict in young people with and without mild to moderate intellectual disabilities at transition from adolescence to adulthood. *Journal of Applied Research in Intellectual Disabilities, 25*(1), 29–38. https://doi.org/10.1111/j.1468-3148.2011.00652.x

Lavigne, G. L., & Vallerand, R. J. (2010). The dynamic processes of influence between contextual and situational motivation: A test of the hierarchical model in a science education setting. *Journal of Applied Social Psychology*, *40*(9), 2343-2359. https://doi.org/10.1111/j.1559-1816.2010.00661.x

Lawless, A., Baum, F., Delany-Crowe, T., MacDougall, C., Williams, C., McDermott, D., & Van Eyk, H. (2018). Developing a framework for a program theory-based approach to evaluating policy processes and outcomes: Health in all policies in South Australia. *International Journal of Health Policy and Management*, *7*(6), 510-521. https://doi.org/10.15171/ijhpm.2017.121

Lee, V. E., & Smith, J. B. (1993). Effects of school restructuring on the achievement and engagement of middle school students. *Sociology of Education, 66*(3), 164–187.

Lei, S. A. (2010). Intrinsic and extrinsic motivation: Evaluating benefits and drawbacks from college instructors' perspectives. *Journal of Instructional Psychology, 37*(2), 153-161.

Lepper, M. R., & Greene, D. (1975). Turning play into work: Effects of adult surveillance and extrinsic rewards on children's intrinsic motivation. *Journal of Personality and Social Psychology, 31*(3), 479–486. https://doi.org/10.1037/h0076484

Lepper, M. R., Greene, D., & Nisbett, R. E. (1973). Undermining children's intrinsic interest with extrinsic reward: A test of the" overjustification" hypothesis. *Journal of Personality and Social Psychology*, *28*(1), 129-137. https://doi.org/10.1037/h0076484

Levin, K. A. (2006). Study design III: Cross-sectional studies. *Evidence-based dentistry*, *7*(1), 24-25.

Levinson, D. J. (1986). A conception of adult development. *American Psychologist, 41*(1), 3–13. https://doi.org/10.1037/0003-066X.41.1.3

Lewis, J. A., Arnold, M. S., House, R., & Toporek, R. L. (2002). *ACA Advocacy Competencies.* https://www.counseling.org/Publications/

Li, E. P. Y. (2004). Self-perceived equal opportunities for people with intellectual disability. *International Journal of Rehabilitation Research*, *27*(3), 241-245.

Li, L., & Moore, D. (1998). Acceptance of disability and its correlates. T*he Journal of Social Psychology, 138*(1), 13-25.

Lindsay, S., McDougall, C., Menna-Dack, D., Sanford, R., & Adams, T. (2015). An ecological approach to understanding barriers to employment for youth with disabilities compared to their typically developing peers: Views of youth, employers, and job

counselors. *Disability and Rehabilitation*, *37*(8), 701-711. https://doi.org/10.3109/09638288.2014.939775

Link, B. G., Cullen, F. T., Struening, E., Shrout, P. E., & Dohrenwend, B. P. (1989). A modified labeling theory approach to mental disorders: An empirical assessment. *American Sociological Review*, *54*(3), 400-423.

Link, B. G., & Phelan, J. C. (2001). Conceptualizing stigma. *Annual Review of Sociology*, *27*, 363–385. https://doi.org/10.1146/annurev.soc.27.1.363

Little, R. J. A. (1988). A test of missing completely at random for multivariate data with missing values. *Journal of the American Statistical Association*, *83*(404), 1198–1202.

Little, T. D., Card, N. A., Bovaird, J. A., Preacher, K. J., & Crandall, C. S. (2007). Structural equation modeling of mediation and moderation with contextual factors. In T. D. Little, J. A. Bovaird, & N. A. Card (Eds.), *Modeling contextual effects in longitudinal studies* (pp. 207–230). Lawrence Erlbaum Associates Publishers.

Livingston, J. D., & Boyd, J. E. (2010). Correlates and consequences of internalized stigma for people living with mental illness: A systematic review and meta-analysis. *Social Science & Medicine*, *71*(12), 2150–2161. https://doi.org/10.1016/j.socscimed.2010.09.030

Lucksted, A., Drapalski, A., Calmes, C., Forbes, C., DeForge, B., & Boyd, J. (2011). Ending self-stigma: Pilot evaluation of a new intervention to reduce internalized stigma among people with mental illnesses. *Psychiatric Rehabilitation Journal*, *35*(1), 51-54. https://doi.org/10.2975/35.1.2011.51.54

Ludwikowski, W., Vogel, D., & Armstrong, P. I. (2009). Attitudes toward career counseling: The role of public and self-stigma. *Journal of Counseling Psychology*, *56*(3), 408-416. https://doi.org/10.1037/a0016180

Luoma, J. B., Kohlenberg, B. S., Hayes, S. C., Bunting, K., & Rye, A. K. (2008). Reducing self-stigma in substance abuse through acceptance and commitment therapy: Model, manual development, and pilot outcomes. *Addiction Research & Theory*, *16*(2), 149-165. https://doi.org/10.1080/16066350701850295

Lv, Y., Wolf, A., & Wang, X. (2013). Experienced stigma and self-stigma in Chinese patients with schizophrenia. *General Hospital Psychiatry*, *35*(1), 83-88. https://doi.org/10.1016/j.genhosppsych.2012.07.007

MacCallum, R. C., & Austin, J. T. (2000). Applications of structural equation modeling in psychological research. *Annual Review of Psychology*, *51*(1), 201-226. https://doi.org/10.1146/annurev.psych.51.1.201

Mackenzie, C. S., Heath, P. J., Vogel, D. L., & Chekay, R. (2019a). Age differences in public stigma, self-stigma, and attitudes toward seeking help: A moderated mediation model. *Journal of Clinical Psychology*, *75*(12), 2259–2272. https://doi.org/10.1002/jclp.22845

Mackenzie, C. S., Visperas, A., Ogrodniczuk, J. S., Oliffe, J. L., & Nurmi, M. A. (2019b). Age and sex differences in self-stigma and public stigma concerning depression and suicide in men. *Stigma and Health*, *4*(2), 233–241. https://doi.org/10.1037/sah0000138

MacKinnon, D. P., Fairchild, A. J., & Fritz, M. S. (2007). Mediation analysis. *Annual Review of Psychology, 58,* 593-614. https://doi.org/10.1146/annurev.psych.58.110405.085542.

Mak, W. W. S., & Cheung, R. Y. M. (2008). Affiliate stigma among caregivers of people with intellectual disability or mental illness. *Journal of Applied Research in Intellectual Disabilities*, *21*(6), 532–545. https://doi.org/10.1111/j.1468-3148.2008.00426.x

Mak, W. W., & Cheung, R. Y. (2010). Self-stigma among concealable minorities in Hong Kong: conceptualization and unified measurement. *American Journal of Orthopsychiatry*, *80*(2), 267-281. https://doi.org/10.1111/j.1939-0025.2010.01030.x

Malczyk, B. R., & Lawson, H. A. (2019). Family focused strategies for student engagement. *Preventing School Failure: Alternative Education for Children and Youth*, *63*(3), 211-219. https://doi.org/10.1080/1045988X.2019.1565752

Malian, I., & Nevin, A. (2002). A review of self-determination literature: Implications for practitioners. *Remedial and Special Education*, *23*(2), 68-74.

Markland, D., Ryan, R. M., Tobin, V. J., & Rollnick, S. (2005). Motivational interviewing and self–determination theory. *Journal of Social and Clinical Psychology*, *24*(6), 811–831. https://doi.org/10.1521/jscp.2005.24.6.811

Martens, RobL., Gulikers, J., & Bastiaens, T. (2004). The impact of intrinsic motivation on e-learning in authentic computer tasks. *Journal of Computer Assisted Learning*, *20*(5), 368–376. https://doi.org/10.1111/j.1365-2729.2004.00096.x

Martin, A. J., Ginns, P., & Papworth, B. (2017). Motivation and engagement: Same or different? Does it matter? *Learning and Individual Differences, 55*, 150-162. https://doi.org/10.1016/j.lindif.2017.03.013

Mazzotti, V. L., & Rowe, D. A. (2015). Meeting the transition needs of students with disabilities in the 21st century. *Teaching Exceptional Children*, *47*(6), 298-300. https://doi.org/10.1177/0040059915587695

McCay, E., Beanlands, H., Zipursky, R., Roy, P., Leszcz, M., Landeen, J., Ryan, K., Conrad, G., Romano, D., Francis, D., Hunt, J., Costantini, L., & Chan, E. (2007). A randomised controlled trial of a group intervention to reduce engulfment and self-stigmatisation in first episode schizophrenia. *Australian e-journal for the Advancement of Mental Health*, *6*(3), 212-220. https://doi.org/10.5172/jamh.6.3.212

Migliore, A., Timmons, J., Butterworth, J., & Lugas, J. (2012). Predictors of employment and postsecondary education of youth with autism. *Rehabilitation Counseling Bulletin*, *55*(3), 176–184. https://doi.org/10.1177/0034355212438943

Miller, A. L. (2011). *Investigating social desirability bias in student self-report surveys.* Association for Institutional Research (NJ1).

Miller, C. T., & Kaiser, C. R. (2001). A theoretical perspective on coping with stigma. *Journal of Social Issues, 57*(1), 73–92. https://doi.org/10.1111/0022-4537.00202

Milligan, K., Moretti, E., & Oreopoulos, P. (2004). Does education improve citizenship? Evidence from the United States and the United Kingdom. *Journal of public Economics, 88*(9-10), 1667-1695. https://doi.org/10.1016/j.jpubeco.2003.10.005

Mittal, D., Sullivan, G., Chekuri, L., Allee, E., & Corrigan, P. W. (2012). Empirical studies of self-stigma reduction strategies: A critical review of the literature. *Psychiatric Services, 63*(10), 974-981. https://doi.org/10.1176/appi.ps.201100459

Mo, Y., & Singh, K. (2008). Parents' relationships and involvement: Effects on students' school engagement and performance. *RMLE Online, 31*(10), 1-11. https://doi.org/10.1080/19404476.2008.11462053

Moore, G. F., Audrey, S., Barker, M., Bond, L., Bonell, C., Hardeman, W., Moore, L., O'Cathain, A., Tinati, T., Wight, D., & Baird, J. (2015). Process evaluation of complex interventions: Medical Research Council guidance. *BMJ, 350*(h1258), https://doi.org/10.1136/bmj.h1258

Morgan, R. L., & Openshaw, K. P. (2011). Targeted transition assessment leading to job placement for young adults with disabilities in rural areas. *Rural Special Education Quarterly, 30*(2), 28-31. https://doi.org/10.1177/875687051103000205

Nagi, S. Z. (1969). *Disability and rehabilitation: Legal, clinical, and self concepts and measurements.* Ohio State University Press.

National Longitudinal Transition Study 2. (n.d.). *National longitudinal transition study 2 – Wave 3 youth survey*. https://nlts2.sri.com/studymeth/wave3.html

National Technical Assistance Center on Transition. (n.d.). *Pre-employment transition services*. https://transitionta.org/topics/pre-ets/

Newmann, F. (1991). Student engagement in academic work: Expanding the perspective on secondary school effectiveness. In J. R. Bliss & W. A. Firestone (Eds.), *Rethinking effective schools: Research and practice* (pp. 58–76). Prentice-Hall.

Newman, F. M. (1992). Introduction. In F. M. Newman (Ed.), *Student engagement and achievement in American secondary schools* (pp. 1-10). Teachers College Press.

Newmann, F. M., Wehlage, G. G., & Lamborn, S. D. (1992). The significance and sources of student engagement. In F. M. Newmann (Ed.), *Student engagement and achievement in American secondary schools*, (pp.11-39). Teachers College Press.

Newman, L., Wagner, M., Cameto, R., & Knokey, A. M. (2009). *The post-high school outcomes of youth with disabilities up to 4 years after high school: A report from the national longitudinal transition study-2 (NLTS2).* National Center for Special Education Research.

Ng, J. Y. Y., Ntoumanis, N., Thøgersen-Ntoumani, C., Deci, E. L., Ryan, R. M., Duda, J. L., & Williams, G. C. (2012). Self-determination theory applied to health contexts: A meta-analysis. *Perspectives on Psychological Science, 7*(4), 325–340. https://doi.org/10.1177/1745691612447309

Niemiec, C. P., & Ryan, R. M. (2009). Autonomy, competence, and relatedness in the classroom: Applying self-determination theory to educational practice. *Theory and Research in Education, 7*(2), 133–144. https://doi.org/10.1177/1477878509104318

Niemiec, C. P., Ryan, R. M., & Deci, E. L. (2009). The path taken: Consequences of attaining intrinsic and extrinsic aspirations in post-college life. *Journal of Research in Personality, 43*(3), 291–306. https://doi.org/10.1016/j.jrp.2008.09.001

Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). McGraw-Hill.

Olinsky, A., Chen, S., & Harlow, L. (2003). The comparative efficacy of imputation methods for missing data in structural equation modeling. *European Journal of Operational Research, 151*(1), 53-79. https://doi.org/10.1016/S0377-2217(02)00578-7

Osborne, J. W. (2015) "What is Rotating in Exploratory Factor Analysis?", *Practical Assessment, Research, and Evaluation, 20*(1), 1-7. https://doi.org/10.7275/hb2g-m060

O'Shea, A., Isadore, K., & Galván, A. (2023). Support for the basic psychological needs and satisfaction with health and quality of life in college students with disabilities. *Journal of American College Health*, *71*(1), 130-139. https://doi.org/10.1080/07448481.2021.1879816

Pandey, S., & Agarwal, S. (2013). Transition to adulthood for youth with disability: Issues for the disabled child and family. *IOSR Journal of Humanities and Social Science (IOSR-JHSS), 17*(3), 41-45. https://doi.org/10.9790/0837-1734145

Pandis, N. (2014). Cross-sectional studies. *American Journal of Orthodontics and Dentofacial Orthopedics, 146*(1), 127-129. https://doi.org/10.1016/j.ajodo.2014.05.005

Paramitha, A., & Indarti, N. (2014). Impact of the environment support on creativity: Assessing the mediating role of intrinsic motivation. *Procedia - Social and Behavioral Sciences, 115*, 102–114. https://doi.org/10.1016/j.sbspro.2014.02.419

Pasman, J. (2011). The consequences of labeling mental illnesses on the self-concept: A review of the literature and future directions. *Social Cosmos*, *2*, 122-127.

Patrick, B. C., Skinner, E. A., & Connell, J. P. (1993). What motivates children's behavior and emotion? Joint effects of perceived control and autonomy in the academic

domain. *Journal of Personality and Social Psychology, 65*(4), 781–791. https://doi.org/10.1037/0022-3514.65.4.781

Paulhus, D. L., & Vazire, S. (2007). The self-report method. In R. W. Robins, R. C. Fraley, & R. F. Krueger (Eds.), *Handbook of research methods in personality psychology* (pp. 224-239). The Guilford Press.

Pelletier, L. G., Séguin-Lévesque, C., & Legault, L. (2002). Pressure from above and pressure from below as determinants of teachers' motivation and teaching behaviors. *Journal of Educational Psychology*, *94*(1), 186-196. https://doi.org/10.1037//0022-0663.94.1.186

Pelletier, L. G., Tuson, K. M., & Haddad, N. K. (1997). Client motivation for therapy scale: A measure of intrinsic motivation, extrinsic motivation, and amotivation for therapy. *Journal of Personality Assessment, 68*(2), 414-435. https://doi.org/10.1207/s15327752jpa6802_11

Perry, J. C., Liu, X., & Pabian, Y. (2010). School engagement as a mediator of academic performance among urban youth: The role of career preparation, parental career support, and teacher support. *The Counseling Psychologist, 38*(2), 269-295. https://doi.org/10.1177/0011000009349272

Peterson, R. A., & Kim, Y. (2013). On the relationship between coefficient alpha and composite reliability. *Journal of Applied Psychology*, *98*(1), 194–198. https://doi.org/10.1037/a0030767

Petrovski, P., & Gleeson, G. (1997). The relationship between job satisfaction and psychological health in people with an intellectual disability in competitive employment. *Journal of Intellectual and Developmental Disability*, *22*(3), 199–211. https://doi.org/10.1080/13668259700033411

Pinel, E. C., Warner, L. R., & Chua, P.-P. (2005). Getting there is only half the battle: Stigma consciousness and maintaining diversity in higher education. *Journal of Social Issues*, *61*(3), 481–506. https://doi.org/10.1111/j.1540-4560.2005.00417.x

Powers, L. E., Geenen, S., Powers, J., Pommier-Satya, S., Turner, A., Dalton, L. D., Drummond, D., & Swank, P. (2012). My life: Effects of a longitudinal, randomized study of self-determination enhancement on the transition outcomes of youth in foster care and special education. *Children and Youth Services Review*, *34*(11), 2179-2187. https://doi.org/10.1016/j.childyouth.2012.07.018

Quinn, D. M., & Chaudoir, S. R. (2015). Living with a concealable stigmatized identity: The impact of anticipated stigma, centrality, salience, and cultural stigma on psychological distress and health. *Journal of Personality and Social Psychology, 97*(4), 634-651. https://doi.org/10.1037/a0015815

Ratts, M. J., & Hutchins, A. M. (2009). ACA advocacy competencies: Social justice advocacy at the client/student level. *Journal of Counseling & Development*, *87*(3), 269-275. https://doi.org/10.1002/j.1556-6678.2009.tb00106.x

Raley, S. K., Mumbardó-Adam, C., Shogren, K. A., Simó-Pinatella, D., & Giné, C. (2018). Curricula to teach skills associated with self-determination: A review of existing research. *Education and training in Autism and Developmental Disabilities, 53*(4), 353-362.

Reeve, J. (2012). A self-determination theory perspective on student engagement. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 149–172). Springer.

Reeve, J., & Tseng, C. M. (2011). Agency as a fourth aspect of students' engagement during learning activities. *Contemporary Educational Psychology*, *36*(4), 257-267. https://doi.org/10.1016/j.cedpsych.2011.05.002

Repetto, J. B., Webb, K. W., Garvan, C. W., & Washington, T. (2002). Connecting student outcomes with transition practices in Florida. *Career Development for Exceptional Individuals*, *25*(2), 123–139. https://doi.org/10.1177/088572880202500203

Roffman, A. J., Herzog, J. E., & Wershba-Gershon, P. M. (1994). Helping young adults understand their learning disabilities. *Journal of Learning Disabilities*, *27*(7), 413-419. https://doi.org/10.1177/002221949402700702

Rose, A. L., Atkey, S. K., Flett, G. L., & Goldberg, J. O. (2019). Self-stigma and domains of well-being in high school youth: Associations with self-efficacy, self-esteem, and self-criticism. *Psychology in the Schools, 56*(8), 1344–1354. https://doi.org/10.1002/pits.22276

Rosenfield, S., & Neese-Todd, S. (1993). Elements of a psychosocial clubhouse program associated with a satisfying quality of life. *Psychiatric Services*, *44*(1), 76-78. https://doi.org/10.1176/ps.44.1.76

Rosseel, Y. (2012). Lavaan: An R Package for Structural Equation Modeling. *Journal of Statistical Software*, *48*(2), 1-36. https://doi.org/10.18637/jss.v048.i02

Roessler, R. T., Brolin, D. E., & Johnson, J. M. (1990). Factors affecting employment success and quality of life: A one year follow-up of students in special education. *Career Development for Exceptional Individuals, 13*(2), 95–107. https://doi.org/10.1177/088572889001300201

Rosso, B. D., Dekas, K. H., & Wrzesniewski, A. (2010). On the meaning of work: A theoretical integration and review. *Research in Organizational Behavior, 30*, 91-127. https://doi.org/10.1016/j.riob.2010.09.001

Rothman, H. R., & Cosden, M. (1995). The relationship between self-perception of a learning disability and achievement, self-concept and social support. *Learning Disability Quarterly*, *18*(3), 203-212. https://doi.org/10.2307/1511043

Roux, A. M., Shattuck, P. T., Cooper, B. P., Anderson, K. A., Wagner, M., & Narendorf, S. C. (2013). Postsecondary employment experiences among young adults with an autism

spectrum disorder. *Journal of the American Academy of Child & Adolescent Psychiatry*, *52*(9), 931-939. https://doi.org/10.1016/j.jaac.2013.05.019

Rouse, M., Shriner, J. G., & Danielson, L. (2000). National assessment and special education in the United States and England and Wales. In M. J. McLaughlin & M. Rouse (Eds.), *Special education and school reform in the United States and Britain* (pp. 66–97). Routledge.

Rubin, D.B. (1987) *Multiple imputation for nonresponse in surveys*. John Wiley & Sons Inc.

Rumberger, R. W., & Rotermund, S. (2012). The relationship between engagement and high school dropout. In S.L. Christenson, A.L. Reschly, & C.Wylie (Eds.), *Handbook of research on student engagement* (pp. 491-513). Springer. https://doi.org/10.1007/978-1-4614-2018-7_24

Ryan, R. (2009). *Self-determination theory and wellbeing*. Wellbeing in Developing Countries. https://www.welldev.org.uk/wed-new/network/research-review/Review_1_Ryan.pdf

Ryan, R. M. (1995). Psychological needs and the facilitation of integrative processes. *Journal of Personality, 63*(3), 397–427. https://doi.org/10.1111/j.1467-6494.1995.tb00501.x

Ryan, R. M., & Connell, J. P. (1989). Perceived locus of causality and internalization: Examining reasons for acting in two domains. *Journal of Personality and Social Psychology*, *57*(5), 749-761. https://doi.org/10.1037/0022-3514.57.5.749

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68-78. https://doi.org/10.1037/0003-066X.55.1.68

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*, *52*(1), 141-166. https://doi.org/10.1146/annurev.psych.52.1.141

Ryan, R. M., & Deci, E. L. (2002). Overview of self-determination theory: An organismic dialectical perspective. In E.L. Deci & R.M. Ryan (Eds.), *Handbook of Self-Determination Research* (pp. 3-33). University of Rochester Press.

Ryan, R. M., & Deci, E. L. (2006). Self-regulation and the problem of human autonomy: Does psychology need choice, self-determination, and will?. *Journal of Personality*, *74*(6), 1557-1586. https://doi.org/10.1111/j.1467-6494.2006.00420.x

Sanford, C., Newman, L., Wagner, M., Cameto, R., Knokey, A. M., & Shaver, D. (2011). *The post-high school outcomes of young adults with disabilities up to 6 years after high school: Key findings from the national longitudinal transition study-2 (NLTS2). NCSER 2011-3004.* National Center for Special Education Research.

Saunders, S. L., & Nedelec, B. (2014). What work means to people with work disability: A scoping review. *Journal of Occupational Rehabilitation, 24*(1), 100–110. https://doi.org/10.1007/s10926-013-9436-y

Scharp, Y. S., Bakker, A. B., & Breevaart, K. (2022). Playful work design and employee work engagement: A self-determination perspective. *Journal of Vocational Behavior, 134*, 103693. https://doi.org/10.1016/j.jvb.2022.103693

Schermelleh-Engel, K., Moosbrugger, H., & Müller, H. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research Online, 8*(2), 23-74.

Schleien, S. J., & Larson, A. (1986). Adult leisure education for the independent use of a community recreation center. *Journal of the Association for Persons with severe Handicaps, 11*(1), 39-44. https://doi.org/10.1177/154079698601100105

Schuman, H., Presser, S., & Ludwig, J. (1981). Context effects on survey responses to questions about abortion. *Public Opinion Quarterly, 45*(2), 216-223. https://doi.org/10.1086/268652

Schunk, D. H., & Mullen, C. A. (2012). Self-efficacy as an engaged learner. In A. L. Reschly & S. L. Christenson (Eds.), *Handbook of research on student engagement* (pp. 219-235). Springer US.

Seong, Y., Wehmeyer, M. L., Palmer, S. B., & Little, T. D. (2015). Effects of the self-directed individualized education program on self-determination and transition of adolescents with disabilities. *Career Development and Transition for Exceptional Individuals, 38*(3), 132–141. https://doi.org/10.1177/2165143414544359

Shandra, C. L., & Hogan, D. P. (2008). School-to-work program participation and the post-high school employment of young adults with disabilities. *Journal of Vocational Rehabilitation, 29*(2), 117–130.

Sharma, G. (2017). Pros and cons of different sampling techniques. *International Journal of Applied Research, 3*(7), 749-752.

Shin, Y. J., & Kelly, K. R. (2013). Cross-cultural comparison of the effects of optimism, intrinsic motivation, and family relations on vocational identity. *The Career Development Quarterly, 61*(2), 141-160. https://doi.org/10.1002/j.2161-0045.2013.00043.x

Shin, Y. J., & Lee, J. Y. (2017). Attachment, career-choice pessimism, and intrinsic motivation as predictors of college students' career adaptability. *Journal of Career Development, 44*(4), 311-326. https://doi.org/10.1177/0894845316653472

Shogren, K. A., Burke, K. M., Anderson, M. H., Antosh, A. A., Wehmeyer, M. L., LaPlante, T., & Shaw, L. A. (2018). Evaluating the differential impact of interventions to promote self-determination and goal attainment for transition-age youth with intellectual

disability. *Research and Practice for Persons with Severe Disabilities*, *43*(3), 165-180. https://doi.org/10.1177/1540796918779775

Shogren, K. A., & Shaw, L. A. (2016). The role of autonomy, self-realization, and psychological empowerment in predicting outcomes for youth with disabilities. *Remedial and Special Education*, *37*(1), 55–62. https://doi.org/10.1177/0741932515585003

Shogren, K. A., Wehmeyer, M. L., Palmer, S. B., Rifenbark, G. G., & Little, T. D. (2015). Relationships between self-determination and postschool outcomes for youth with disabilities. *The Journal of Special Education*, *48*(4), 256-267. https://doi.org/10.1177/0022466913489733

Simons-Morton, B., & Chen, R. (2009). Peer and parent influences on school engagement among early adolescents. *Youth & Society, 41*(1), 3–25. https://doi.org/10.1177/0044118X09334861

Skinner, B. F. (1953). Some contributions of an experimental analysis of behavior to psychology as a whole. *American Psychologist*, *8*(2), 69-78. https://doi.org/10.1037/h0054118

Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology*, *85*(4), 571-581. https://doi.org/10.1037/0022-0663.85.4.571

Skinner, E. A., Kindermann, T. A., Connell, J. P., & Wellborn, J. G. (2009). Engagement and disaffection as organizational constructs in the dynamics of motivational development. In K. R. Wentzel & A. Wigfield (Eds.), *Handbook of motivation at school* (pp. 223–245). Routledge.

Skivington, K., Matthews, L., Simpson, S. A., Craig, P., Baird, J., Blazeby, J. M., Boyd, K.A., Craig, N., French, D.P., McIntosh, E., Petticrew, M., Rycroft-Malone, J., White, M., & Moore, L. (2021). A new framework for developing and evaluating complex interventions: Update of Medical Research Council guidance. *BMJ*, *374*. https://doi.org/10.1136/bmj.n2061

Smart, J. F., & Smart, D. W. (2006). Models of disability: Implications for the counseling profession. *Journal of Counseling & Development*, *84*(1), 29–40. https://doi.org/10.1002/j.1556-6678.2006.tb00377.x

Smith, M. J., Fleming, M. F., Wright, M. A., Losh, M., Humm, L. B., Olsen, D., & Bell, M. D. (2015). Brief report: Vocational outcomes for young adults with autism spectrum disorders at six months after virtual reality job interview training. *Journal of Autism and Developmental Disorders*, *45*, 3364-3369. https://doi.org/10.1007/s10803-015-2470-1

Steele, C. M. (1992). Race and the schooling of Black Americans. *The Atlantic Monthly*, *269*(4), 68-78.

Steiger, J. H. (1990). Structural model evaluation and modification: An interval estimation approach. *Multivariate Behavioral Research, 25*(2), 173-180. https://doi.org/10.1207/s15327906mbr2502_4

Stevens, J. P. (1992). *Applied multivariate statistics for the social sciences* (2nd ed.). Erlbaum.

Suhr, D. (2006). *The basics of structural equation modeling*. https://www.lexjansen.com/wuss/2006/tutorials/TUT-Suhr.pdf

Sulea, C., Virga, D., Maricutoiu, L. P., Schaufeli, W., Zaborila Dumitru, C., & Sava, F. A. (2012). Work engagement as mediator between job characteristics and positive and negative extra-role behaviors. *Career Development International, 17*(3), 188-207. https://doi.org/10.1108/13620431211241054

Super, D. E. (1980). A life-span, life-space approach to career development. *Journal of Vocational Behavior, 16*(3), 282-298. https://doi.org/10.1016/0001-8791(80)90056-1

Super, D. E. (1990). A life span, life-space approach to career development. In D. Brown, & L. Brooks (Eds.), *Career choice and development* (2nd ed.). Jossey–Bass

Surmann, M., von Gruchalla, L., Falke, S., Maisch, B., Uhlmann, C., Bock, E., Arolt, V., & Lencer, R. (2017). The importance of strengthening competence and control beliefs in patients with psychosis to reduce treatment hindering self-stigmatization. *Psychiatry Research, 255*, 314-320. https://doi.org/10.1016/j.psychres.2017.05.053

Test, D. W., Karvonen, M., Wood, W. M., Browder, D., & Algozzine, B. (2000). Choosing a self-determination curriculum: Plan for the future. *Teaching Exceptional Children, 33*(2), 48-54. https://doi.org/10.1177/004005990003300207

Test, D. W., Mazzotti, V. L., Mustian, A. L., Fowler, C. H., Kortering, L., & Kohler, P. (2009). Evidence-based secondary transition predictors for improving postschool outcomes for students with disabilities. *Career Development for Exceptional Individuals*, *32*(3), 160–181. https://doi.org/10.1177/0885728809346960

Thurlow, M. L. (2000). Standards-based reform and students with disabilities: Reflections on a decade of change. *Focus on Exceptional Children, 33*(3), 1–15.

Timmons, J., Podmostko, M., Bremer, C., Lavin, D., & Wills, J. (2005). *Career planning begins with assessment: A guide for professionals serving youth with educational and career development challenges.* National Collaborative on Workforce and Disability for Youth.

Tomaszewski, W., Xiang, N., & Western, M. (2020). Student engagement as a mediator of the effects of socio-economic status on academic performance among secondary school students in Australia. *British Educational Research Journal, 46*(3), 610-630. https://doi.org/10.1002/berj.3599

Trostel, P. A. (2015). It's not just the money the benefits of college education to individuals and to society. *Government & Civic Life, 4*

https://digitalcommons.library.umaine.edu/mcspc_gov_civic/4?utm_source=digitalcommons.library.umaine.edu%2Fmcspc_gov_civic%2F4&utm_medium=PDF&utm_campaign=PDFCoverPages

Ullman, J. B. (2006). Structural equation modeling: Reviewing the basics and moving forward. *Journal of Personality Assessment, 87*(1), 35-50. https://doi.org/10.1207/s15327752jpa8701_03

United Nations. (n.d.). *Fact sheet on persons with disabilities.* https://www.un.org/development/desa/disabilities/resources/factsheet-on-persons-with-disabilities.html

U.S. Department of Labor. (2023). *Persons with a disability: Labor force characteristics- 2022.* https://www.bls.gov/news.release/pdf/disabl.pdf

Van den Broeck, A., Ferris, D. L., Chang, C. H., & Rosen, C. C. (2016). A review of self-determination theory's basic psychological needs at work. *Journal of Management, 42*(5), 1195-1229. https://doi.org/10.1177/0149206316632058

Van den Broeck, A., Vansteenkiste, M., Lens, W., & De Witte, H. (2009). Unemployed individuals' work values and job flexibility: An explanation from expectancy-value theory and self-determination theory. *Applied Psychology, 59*(2), 296–317. https://doi.org/10.1111/j.1464-05 97.2009.00391.x

Van Reusen, A. K., & Bos, C. S. (1994). Facilitating student participation in individualized education programs through motivation strategy instruction. *Exceptional Children*, *60*(5), 466-475.

Vansteenkiste, M., Ryan, R. M., & Soenens, B. (2020). Basic psychological need theory: Advancements, critical themes, and future directions. *Motivation and Emotion*, *44*(1), 1–31. https://doi.org/10.1007/s11031-019-09818-1

Vansteenkiste, M., Neyrinck, B., Niemiec, C. P., Soenens, B., de Witte, H., & Van den Broeck, A. (2007). On the relations among work value orientations, psychological need satisfaction, and job outcomes: A self-determination theory approach. *Journal of Occupational and Organizational Psychology, 80*(2), 251–277. https://doi.org/10.1348/096317906X111024

Vansteenkiste, M., Ryan, R. M., & Soenens, B. (2020). Basic psychological need theory: Advancements, critical themes, and future directions. *Motivation and Emotion*, *44*(1), 1–31. https://doi.org/10.1007/s11031-019-09818-1

Vauth, R., Kleim, B., Wirtz, M., & Corrigan, P. W. (2007). Self-efficacy and empowerment as outcomes of self-stigmatizing and coping in schizophrenia. *Psychiatry Research*, *150*(1), 71–80. https://doi.org/10.1016/j.psychres.2006.07.005

Vazire, S. (2006). Informant reports: A cheap, fast, and easy method for personality assessment. *Journal of Research in Personality*, *40*(5), 472-481. https://doi.org/10.1016/j.jrp.2005.03.003

Vogel, D. L., Bitman, R. L., Hammer, J. H., & Wade, N. G. (2013). Is stigma internalized? The longitudinal impact of public stigma on self-stigma. *Journal of Counseling Psychology*, *60*(2), 311–316. https://doi.org/10.1037/a0031889

Vrbova, K., Prasko, J., Holubova, M., Kamaradova, D., Ociskova, M., Marackova, M., Latalova, K., Grambal, A., Slepecky, M., & Zatkova, M. (2016). Self-stigma and schizophrenia: A cross-sectional study. *Neuropsychiatric Disease and Treatment*, *12*, 3011–3020. https://doi.org/10.2147/NDT.S120298

Vornholt, K., Villotti, P., Muschalla, B., Bauer, J., Colella, A., Zijlstra, F., Ruitenbeek, G.V., Uitdewilligen, S., & Corbière, M. (2018). Disability and employment–overview and highlights. *European Journal of Work and Organizational Psychology*, *27*(1), 40-55. https://doi.org/10.1080/1359432X.2017.1387536

Waddell, G., & Burton, A. K. (2006). *Is work good for your health and well-being?*. The Stationary Office. https://cardinal-management.co.uk/wp-content/uploads/2016/04/Burton-Waddell-is-work-good-for-you.pdf

Wang, M. T., & Eccles, J. S. (2012). Adolescent behavioral, emotional, and cognitive engagement trajectories in school and their differential relations to educational success. *Journal of Research on Adolescence*, *22*(1), 31-39. https://doi.org/10.1111/j.1532-7795.2011.00753.x

Watson, A. C., Corrigan, P., Larson, J. E., & Sells, M. (2007). Self-stigma in people with mental illness. *Schizophrenia Bulletin*, *33*(6), 1312-1318. https://doi.org/10.1093/schbul/sbl076

Wehman, P., Sima, A. P., Ketchum, J., West, M. D., Chan, F., & Luecking, R. (2015). Predictors of successful transition from school to employment for youth with disabilities. *Journal of Occupational Rehabilitation*, *25*(2), 323-334. https://doi.org/10.1007/s10926-014-9541-6

Wehmeyer, M., Lawrence, M., Kelchner, K., Palmer, S., Garner, N., & Soukup, J. (2004). *Whose Future Is It Anyway? A student directed transition planning process* (2nd ed.). Beach Center on Disability.

Wehmeyer, M. L., & Palmer, S. B. (2003). Adult outcomes for students with cognitive disabilities three-years after high school: The impact of self-determination. *Education and Training in Developmental Disabilities*, *38*(2), 131–144.

Wehmeyer, M. L., Palmer, S. B., Lee, Y., Williams-Diehm, K., & Shogren, K. (2011). A randomized-trial evaluation of the effect of whose future is it anyway? on self-determination. *Career Development for Exceptional Individuals*, *34*(1), 45–56. https://doi.org/10.1177/0885728810383559

Wehmeyer, M. L., & Powers, L. E. (2007). Self-Determination. *Exceptionality*, *15*(1), 1–2. https://doi.org/10.1080/09362830709336921

Wehmeyer, M., & Schwartz, M. (1997). Self-determination and positive adult outcomes: A follow-up study of youth with mental retardation or learning disabilities. *Exceptional Children, 63*(2), 245–255. https://doi.org/10.1177/001440299706300207

Wehmeyer, M. L., & Schwartz, M. (1998). The self determination focus of transition goals for students with mental retardation. *Career Development for Exceptional Individuals*, *21*(1), 75–86. https://doi.org/10.1177/088572889802100107

Werner, P., Aviv, A., & Barak, Y. (2008). Self-stigma, self-esteem and age in persons with schizophrenia. *International Psychogeriatrics, 20*(1), 174–187. https://doi.org/10.1017/S1041610207005340

Weston, R., & Gore Jr, P. A. (2006). A brief guide to structural equation modeling. *The Counseling Psychologist*, *34*(5), 719-751. https://doi.org/10.1177/0011000006286345

Wiseman, R. L., Emry, R. A., & Morgan, D. (1988). Predicting academic success for disabled students in higher education. *Research in Higher Education, 28*(3), 255-269.

Workforce Innovation and Opportunity Act of 2014, Pub. L. No. 113-128, § 129 (2014). https://www.congress.gov/113/bills/hr803/BILLS-113hr803enr.pdf

You, S. (2005). *Identifying significant factors related to adolescents' academic engagement using multilevel latent growth curve modeling*. University of California, Santa Barbara.

Yuan, K. H., Chan, W., Marcoulides, G. A., & Bentler, P. M. (2016). Assessing structural equation models by equivalence testing with adjusted fit indexes. *Structural Equation Modeling: A Multidisciplinary Journal, 23*(3), 319-330. https://doi.org/10.1080/10705511.2015.1065414

Zheng, C., Gaumer Erickson, A., Kingston, N. M., & Noonan, P. M. (2014). The relationship among self-determination, self-concept, and academic achievement for students with learning disabilities. *Journal of Learning Disabilities*, *47*(5), 462–474. https://doi.org/10.1177/0022219412469688

APPENDIX A: INSTITUTIONAL REVIEW BOARD NOTICE OF APPROVAL

MICHIGAN STATE
UNIVERSITY

Initial Study APPROVAL
Revised Common Rule

October 23, 2023

To: Connie Sung

Re: **MSU Study ID:** STUDY00009677
IRB: Social Science / Behavioral / Education Institutional Review Board
Principal Investigator: Connie Sung
Category: Expedited 7
Submission: Initial Study STUDY00009677
Submission Approval Date: 10/20/2023
Effective Date: 10/20/2023
Study Expiration Date: **None; however modification and closure submissions are required (see below).**

Title: The Impact of Self-Stigma and Self-Determination on Career Outcomes of Transition-Aged Individuals with Disabilities: A Structural Equation Modeling Approach

Office of Regulatory Affairs
Human Research Protection Program

4000 Collins Road
Suite 136
Lansing, MI 48910

517-355-2180
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Email: irb@msu.edu
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This submission has been approved by the Michigan State University (MSU) Social Science / Behavioral / Education Institutional Review Board. The submission was reviewed by the Institutional Review Board (IRB) through the Non-Committee Review procedure. The IRB has found that this study protects the rights and welfare of human subjects and meets the requirements of MSU's Federal Wide Assurance (FWA00004556) and the federal regulations for the protection of human subjects in research (e.g., 2018 45 CFR 46, 21 CFR 50, 56, other applicable regulations).

How to Access Final Documents
To access the study's final materials, including those approved by the IRB such as consent forms, recruitment materials, and the approved protocol, if applicable, please log into the Click™ Research Compliance System, open the study's workspace, and view the "Documents" tab. To obtain consent form(s) stamped with the IRB watermark, select the "Final" PDF version of your consent form(s) as applicable in the "Documents" tab. Please note that the consent form(s) stamped with the IRB watermark must typically be used.

Expiration of IRB Approval: The IRB approval for this study does not have an expiration date. Therefore, continuing review submissions to extend an approval period for this study are not required. **Modification and closure submissions are still required (see below).**

Modifications: Any proposed change or modification with certain limited exceptions discussed below must be reviewed and approved by the IRB prior to implementation of the change. Please submit a Modification request to have the changes reviewed.

MSU is an affirmative-action, equal-opportunity employer.

APPENDIX B: PROMOTIONAL FLYER

APPENDIX C: EMAIL INVITE TO PARTICIPANTS

[Subject] Career Preparation Study among Individuals with Disabilities in a Transition Period – Research Participants Wanted!

Dear High School/College/University Students with Disabilities,

I hope this email finds you well. I am Heerak Choi, a doctoral candidate in Rehabilitation Counselor Education at Michigan State University. Our research team is currently conducting a study about understanding the relationship between self-stigma, self-determination, and career preparation among individuals with disabilities in a transition period. You may have received this email because you were identified (a) as a person with disability and (b) are in a transition period from school/post-school to work/advanced education.

You can participate in this study by completing a survey consisting of 44 questions, which will take about 30-40 minutes. Please complete the online survey by clicking the following link: _____. Your participation is crucial in helping rehabilitation and health professionals have a better understanding of career outcomes and its relationship with psychological factors.

In recognition of your contribution and participation in this study, you will receive a **$10 Amazon gift card** once you complete at least 80% of the survey and submit it. The gift card will be sent to you via email address that you specified at the end of the survey.

If you have any questions or concerns about the study and your participation, please email me (Heerak Choi) at choiheer@msu.edu. Thank you for your consideration.

Sincerely,
Heerak Choi, MS, CRC
Doctoral Candidate
Department of Counseling, Educational Psychology, and Special Education
Michigan State University
Email: choiheer@msu.edu

APPENDIX D: EMAIL REMINDER

[Subject] Just a Reminder- 2 Weeks Left!
Career Preparation Study among Individuals with Disabilities in a Transition Period

Dear High School/College/University Students with Disabilities,

I hope this email finds you well! I am following up on the request of asking your participation in the research about understanding the relationship between self-stigma, self-determination, and career preparation among individuals with disabilities in a transition period. If you have already completed the survey, I would like to convey my sincere gratitude for your contribution to this important study.

If you have not yet completed it, please consider participating in the survey by clicking the following link: _____. Your participation is crucial in helping rehabilitation and health professionals have a better understanding of career outcomes and its relationship with psychological factors.

In recognition of your contribution and participation in this study, you will receive a **$10 Amazon gift card** once you complete at least 80% of the survey and submit it. The gift card will be sent to you via email that you specified at the end of the survey.

If you have any questions or concerns about the study and your participation, please email me (Heerak Choi) at choiheer@msu.edu. Thank you for your consideration.

Sincerely,
Heerak Choi, MS, CRC
Doctoral Candidate
Department of Counseling, Educational Psychology, and Special Education
Michigan State University
Email: choiheer@msu.edu

APPENDIX E: CONSENT FORM

You are being asked to participate in a research study. Researchers are required to provide consent to inform you about the research study, to convey that participation is voluntary, to explain the risks and benefits of participation, and to empower you to make an informed decision. You should feel free to ask the researchers any questions you may have.

Study Title	The Impact of Self-stigma and Self-determination on Career Outcomes of Individuals with Disabilities in the Transition Period: A Structural Equation Modeling Approach
Researcher	Heerak Choi, M.S., CRC., Doctoral Candidate in Counselor Education and Supervision Program Connie Sung, Ph.D., CRC, LPC, Professor in Counselor Education and Supervision Program
Department and Institution	Department of Counseling, Educational Psychology, and Special Education, Michigan State University
Contact Information	Heerak Choi (choiheer@msu.edu; 608-770-5880)

1. PURPOSE OF RESEARCH

The purpose of this study is to understand the impact of self-stigma and self-determination on the career outcomes of individuals with disabilities in the transition period via using a structural equation modeling approach. The researchers hope to identify the full range of dynamics between self-stigma, self-determination, and career outcomes and outline a new conceptual framework for supporting individuals with disabilities in a transition period. You are being asked to participate because you may be a transition-aged (aged 16 or above) individuals with disabilities in the U.S. (e.g., high school/college/university student with disabilities, youth with disabilities, young adult with disabilities).

2. WHAT YOU WILL DO

As part of this study, you will be asked to complete a 30-40 minutes survey (either hard copy or online) inquiring about your psychosocial adaptation and career outcomes.

3. POTENTIAL BENEFITS

You will not directly benefit from participation in this study. However, your participation in this study may contribute to understanding the relationship between stigma, psychosocial adaptation, and career outcomes among individuals with disabilities in a transition period.

4. POTENTIAL RISKS

There are no known or foreseeable physical, social, or economic risks associated with participation in this study.

5. PRIVACY AND CONFIDENTIALITY

To ensure the subjects' privacy is protected, the following measures will be taken:

- The survey will be kept anonymous;
- Only the research study investigators and the Human Research Protection Program will have access to research documents and data;
- All documents and files containing study data will be destroyed 3 years after the completion of the research;
- The results of this study may be published or presented at professional meetings, but only aggregated information will be used, and no participant information will be included.

6. YOUR RIGHTS TO PARTICIPATE, SAY NO, OR WITHDRAW

Participation in this research project is your choice. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You have the right to say no. You may change your mind at any time and withdraw. You may choose not to answer specific questions or to stop participating at any time.

7. COSTS AND COMPENSATION FOR PARTICIPATION IN THE STUDY

There are no costs to you for participating in this study. Upon completion of the study, you will be given the option to provide contact information in order to receive a $10 Amazon gift card as a token of appreciation. To receive a gift card, each participant needs to submit a survey one time. Within a couple of months after the survey is completed, a $10 Amazon gift card will be distributed to the email address that you provide.

8. CONTACT INFORMATION

If you have concerns or questions about this study, or to report an injury, please contact the research personnel;

- Heerak Choi, Doctoral candidate of Rehabilitation Counselor Education, at choiheer@msu.edu, or (608)770-5880;
- Dr. Connie Sung, Professor of Rehabilitation Counseling, at csung@msu.edu, or (517)353-1638

If you have questions or concerns about your role and rights as a research participant, would like to obtain information or offer input, or would like to register a complaint about this study, you may contact, anonymously if you wish, the Michigan State University's Human Research Protection Program at (517) 355-2180, Fax (517) 432-4503, or e-mail irb@msu.edu or regular mail at 4000 Collins Rd, Suite 136, Lansing, MI 48910.

9. DOCUMENTATION OF INFORMED CONSENT

Please indicate that you have voluntarily agreed to participate in this research study by clicking the "NEXT" button below.

NEXT →

PARENT PERMISSION FORM

You are being asked to participate in a research study. Researchers are required to provide consent to inform you about the research study, to convey that participation is voluntary, to explain the risks and benefits of participation, and to empower you to make an informed decision. You should feel free to ask the researchers any questions you may have.

Study Title	The Impact of Self-stigma and Self-determination on Career Outcomes of Individuals with Disabilities in the Transition Period: A Structural Equation Modeling Approach
Researcher	Heerak Choi, M.S., CRC., Doctoral Candidate in Counselor Education and Supervision Program Connie Sung, Ph.D., CRC, LPC, Professor in Counselor Education and Supervision Program
Department and Institution	Department of Counseling, Educational Psychology, and Special Education
Contact Information	Heerak Choi (choiheer@msu.edu; 608-770-5880)

The following page is for your parents. You can participate in the survey when your parents permit you to do so. If you are a parent/guardian of your child and would like to review the parental permission form, please click "NEXT", review the permission form, and indicate if you permit your child to participate in the survey.

NEXT →

Your child is being asked to participate in a research study. Researchers are required to provide consent to inform you about the research study, to convey that participation is voluntary, to explain the risks and benefits of participation, and to empower you to make an informed decision for your child. You should feel free to ask the researchers any questions you may have.

1. PURPOSE OF RESEARCH

The purpose of this study is to understand the impact of self-stigma and self-determination on the career outcomes of individuals with disabilities in the transition period via using a structural equation modeling approach. The researchers hope to identify the full range of dynamics between self-stigma, self-determination, and career outcomes and outline a new conceptual framework for supporting individuals with disabilities in a transition period. Participants are being asked to participate because they may be transition-aged (aged 16 or above) individuals with disabilities in the U.S. (e.g., high school/college/university students with disabilities, youth with disabilities, young adults with disabilities).

2. WHAT YOU WILL DO

As part of this study, participants will be asked to complete a 30-40 minutes survey (either hard copy or online) inquiring about their psychosocial adaptation and career outcomes.

3. POTENTIAL BENEFITS

Participants will not directly benefit from participation in this study. However, their participation in this study may contribute to understanding the relationship between stigma, psychosocial adaptation, and career outcomes among individuals with disabilities in a transition period.

4. POTENTIAL RISKS

There are no known or foreseeable physical, social, or economic risks associated with participation in this study.

5. PRIVACY AND CONFIDENTIALITY

To ensure the subjects' privacy is protected, the following measures will be taken:

- The survey will be kept anonymous;
- Only the research study investigators and the Human Research Protection Program will have access to research documents and data;
- All documents and files containing study data will be destroyed 3 years after the completion of the research;
- The results of this study may be published or presented at professional meetings, but only aggregated information will be used, and no participant information will be included.

6. YOUR RIGHTS TO PARTICIPATE, SAY NO, OR WITHDRAW

Participation in this research project is participants' choice. Refusal to participate will involve no penalty or loss of benefits to which your child is otherwise entitled. Participants have the right to say no. Participants may change their minds at any time and withdraw. Participants may choose not to answer specific questions or to stop participating at any time.

7. COSTS AND COMPENSATION FOR PARTICIPATION IN THE STUDY

There are no costs to your child for participating in this study. Upon completion of the study, your child will be given the option to provide contact information in order to receive a $10 Amazon gift card as a token of appreciation. To receive a gift card, each participant needs to submit a survey one time. Within a couple of months after the survey is completed, a $10 Amazon gift card will be distributed to the email address that your child provides.

8. CONTACT INFORMATION

If you have concerns or questions about this study, or to report an injury, please contact the research personnel;

- Heerak Choi, Doctoral candidate in Rehabilitation Counselor Education Program, at choiheer@msu.edu, or (608)770-5880;
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If you have questions or concerns about your role and rights as a research participant, would like to obtain information or offer input, or would like to register a complaint about this study, you may contact, anonymously if you wish, the Michigan State University's Human Research Protection Program at (517) 355-2180, Fax (517) 432-4503, or e-mail irb@msu.edu or regular mail at 4000 Collins Rd, Suite 136, Lansing, MI 48910.

9. DOCUMENTATION OF INFORMED CONSENT

Please indicate that you have given permission for your child to participate in the study by clicking the "NEXT" button below.

NEXT →

Now, the next page is for you (child aged 16-17). Please review the assent form and indicate if you would like to participate in the survey.

CHILD ASSENT FORM

You are being asked to participate in a research study. Researchers are required to provide consent to inform you about the research study, to convey that participation is voluntary, to explain the risks and benefits of participation, and to empower you to make an informed decision. You should feel free to ask the researchers any questions you may have.

1. PURPOSE OF RESEARCH

The purpose of this study is to understand the impact of self-stigma and self-determination on the career outcomes of individuals with disabilities in the transition period via using a structural equation modeling approach. The researchers hope to identify the full range of dynamics between self-stigma, self-determination, and career outcomes and outline a new conceptual framework for supporting individuals with disabilities in a transition period. You are being asked to participate because you may be a transition-aged (aged 16 or above) individuals with disabilities in the U.S. (e.g., high school/college/university student with disabilities, youth with disabilities, young adult with disabilities).

Study Title	The Impact of Self-stigma and Self-determination on Career Outcomes of Individuals with Disabilities in the Transition Period: A Structural Equation Modeling Approach
Researcher	Heerak Choi, M.S., CRC., Doctoral Candidate in Counselor Education and Supervision Program Connie Sung, Ph.D., CRC, LPC, Professor in Counselor Education and Supervision Program
Department and Institution	Department of Counseling, Educational Psychology, and Special Education
Contact Information	Heerak Choi (choiheer@msu.edu; 608-770-5880)

2. WHAT YOU WILL DO

As part of this study, you will be asked to complete a 30-40 minutes survey (either hard copy or online) inquiring about your psychosocial adaptation and career outcomes.

3. POTENTIAL BENEFITS

You will not directly benefit from participation in this study. However, your participation in this study may contribute to understanding the relationship between stigma, psychosocial adaptation, and career outcomes among individuals with disabilities in a transition period.

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There are no known or foreseeable physical, social, or economic risks associated with participation in this study.

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To ensure the subjects' privacy is protected, the following measures will be taken:

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- Only the research study investigators and the Human Research Protection Program will have access to research documents and data;
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If you have questions or concerns about your role and rights as a research participant, would like to obtain information or offer input, or would like to register a complaint about this study, you may contact, anonymously if you wish, the Michigan State University's Human Research Protection Program at (517) 355-2180, Fax (517) 432-4503, or e-mail irb@msu.edu or regular mail at 4000 Collins Rd, Suite 136, Lansing, MI 48910.

9. DOCUMENTATION OF INFORMED ASSET

Please indicate that you have voluntarily agreed to participate in this research study by clicking the "NEXT" button below.

NEXT →

APPENDIX F: INCENTIVE FORM

Thank you again for your time spent taking the survey. In recognition of your contribution and participation, the first 300 people will be given the option to provide your email address in order to receive a $10 Amazon gift card within a couple of months after the survey is completed. Please leave your valid and active email address below.

Email address: _____

APPENDIX G: STUDY QUESTIONNAIRE

Section 1: Demographic Information

Instructions: Please check the answer options that best describe your demographic.

	Questions	Answers
1	What is your age?	□ 14 – 17 □ 18 – 26 □ 27 or over
2	What is your gender?	□ Male □ Female □ Non-binary □ Prefer not to respond □ Others (please specify: _____)
3	What is your race/ethnicity? (check all that apply)	□ White or Caucasian □ Black or African American □ Hispanic or Latino □ Asian □ American Indian or Alaska Native □ Native Hawaiian or Other Pacific Islander □ Others (please specify: _____)
4	What is your educational level?	□ Grades 9-12 □ Completed high school/GED □ Any post-secondary education (not degree pursuing) □ 2-year, community college, or vocational/technical certificate □ 2-year, community college graduated or vocational/technical certificate achieved □ 4-year college/university □ 4-year college/university graduated □ Master's level graduate □ Doctoral level graduate □ Graduate school graduated □ Outside of school □ Others (please specify: _____)
5	What is your major? *(Logic included: when either one of the following selected in the previous question - associate degree or vocational/technical certificate, bachelor's degree, or master's degree or higher)*	□ Agriculture and natural resources □ Arts and letters □ Communication Arts and Sciences □ Education □ Business □ Human Medicine □ Law □ Music □ Natural Science □ Nursing

		□ Osteopathic Medicine □ Arts and Humanities □ Veterinary Medicine □ Medical School □ Others (please specify: _____)
6	What is your disability? (check all that apply)	□ Attention Deficit and Hyperactivity Disorder (ADHD) □ Autism Spectrum Disorder (e.g., Autistic Disorder, Asperger's, PDD-NOS, etc.) □ Blindness □ Deaf □ Hard of hearing □ Visual impairment □ Brain injury □ Chronic health disabilities (e.g., Lupus, chronic pain, multiple sclerosis, Crohn's disease, etc.) □ Learning disabilities □ Mobility disabilities □ Physical disabilities □ Psychiatric disabilities (e.g., Schizophrenia, depression, anxiety, bipolar disorder, etc.) □ Other disabilities (Please specify: _____)

Section 2: Self-Stigma

Instruction: Please read the following statements and indicate the best answer that represents how you think, feel, and behave.

1	2	3	4
Strongly disagree	Disagree	Agree	Strongly agree

1	My identity as a person with disability is a burden to me.	1	2	3	4
2	My identity as a person with disability incurs inconvenience in my daily life.	1	2	3	4
3	The identity of being a person with disability taints my life.	1	2	3	4
4	I feel uncomfortable because I am a person with disability.	1	2	3	4
5	I fear that others would know that I am a person with disability.	1	2	3	4
6	I feel like I cannot do anything about my disability status.	1	2	3	4
7	I estrange myself from others because I am a person with disability.	1	2	3	4
8	I avoid interacting with others because I am a person with disability.	1	2	3	4
9	I dare not to make new friends lest they found that I am a person with disability.	1	2	3	4

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Section 3: Basic Needs of Self-Determination: Autonomy, Competence, and Relatedness

Instruction: Please read the following statements and indicate the best answer that represents how you think, feel, and behave.

1	2	3	4	5
Completely Untrue	Untrue	Neutral	True	Completely True

1	I feel a sense of choice and freedom in the things I undertake.	1	2	3	4	5
2	I feel that my decisions reflect what I really want.	1	2	3	4	5
3	I feel my choices express who I really am.	1	2	3	4	5
4	I feel I have been doing what really interests me.	1	2	3	4	5
5	I feel confident that I can do things well.	1	2	3	4	5
6	I feel capable at what I do.	1	2	3	4	5
7	I feel competent to achieve my goals.	1	2	3	4	5
8	I feel I can successfully complete difficult tasks.	1	2	3	4	5
9	I feel that the people I care about also care about me.	1	2	3	4	5
10	I feel connected with people who care for me, and for whom I care.	1	2	3	4	5
11	I feel close and connected with other people who are important to me.	1	2	3	4	5
12	I experience a warm feeling with the people I spend time with.	1	2	3	4	5

Section 4: Intrinsic Work Motivation

Instruction: Why do you or would you put efforts into your current/future job?

1	2	3	4	5	6	7
Not at all	Very little	A little	Moderately	Strongly	Very Strongly	Completely

1	Because I personally consider it important to put efforts in this job.	1	2	3	4	5	6	7
2	Because putting efforts in this job aligns with my personal values.	1	2	3	4	5	6	7
3	Because putting efforts in this job has personal significance to me.	1	2	3	4	5	6	7
4	Because I have fun doing my job.	1	2	3	4	5	6	7
5	Because what I do in my work is exciting.	1	2	3	4	5	6	7
6	Because the work I do is interesting.	1	2	3	4	5	6	7

Section 5: Career Engagement

Instruction: Please indicate the best answer that describes your career engagement.

1	2	3	4	5
Not much	Little	Somewhat	Much	A great deal

1	To what extent have you been in the past 6 months actively seeking to design your professional future?	1	2	3	4	5
2	To what extent have you been in the past 6 months undertaking things to achieve your career goals?	1	2	3	4	5
3	To what extent have you been in the past 6 months caring for the development of your career?	1	2	3	4	5
4	To what extent have you been in the past 6 months developing plans and goals for your future career?	1	2	3	4	5
5	To what extent have you been in the past 6 months sincerely thinking about personal values, interests, abilities, and weaknesses?	1	2	3	4	5
6	To what extent have you been in the past 6 months collecting information about employers, professional development opportunities, or the job market in your desired area?	1	2	3	4	5
7	To what extent have you been in the past 6 months establishing or maintaining contacts with people who can help you professionally?	1	2	3	4	5
8	To what extent have you been in the past 6 months voluntarily participating in further education, training, or other events to support your career?	1	2	3	4	5
9	To what extent have you been in the past 6 months assuming duties or positions that will help you progress professionally?	1	2	3	4	5

Section 6: Observable Career Outcome and Career Achievability

Instruction: Please check the answer option that best describes your current career status.

	Questions	Answers
1	Have you had any paid/unpaid jobs (e.g., internship, apprenticeship, full-time, part-time, volunteer) during the past 2 years other than work around the house?	□ Not worked before □ Unpaid job □ Paid part-time job □ Paid full-time job
2	How many job/volunteer/college/university/post-secondary education program interviews have you completed?	□ "1" □ "2" □ "3" □ "4" □ "5 or more"
3	How much are/were you paid per hour for your current/last job?	□ Less than $6.55 □ $6.55 to $7.99 □ $8.00 to $8.99 □ $9.00 to $11.99 □ More than $12.00

Instruction: Please indicate your answer that best describes your thoughts/beliefs.

1	2	3	4	5
Strong disagreement	Disagreement	Neutral	Agreement	Strong agreement

1	I believe I could easily obtain a job	1	2	3	4	5
2	I believe I could easily obtain a job that is in line with my level of education and experience	1	2	3	4	5
3	I believe I could easily obtain a job that would give me a high level of satisfaction	1	2	3	4	5
4	I believe I could easily enroll in college/post-secondary education/graduate school	1	2	3	4	5
5	I believe I could easily enroll in college/post-secondary education/graduate school that is in line with my level of education and experience	1	2	3	4	5
6	I believe I could easily enroll in college/post-secondary education/graduate school that would give me a high level of satisfaction	1	2	3	4	5

Note. observable career outcome (above) and career achievability (bottom)