

**Constructing a Career: An Investigation of the  
Career Construction Model of Adaptation in Recent Graduates**

By

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### **Abstract**

The transition from university to the workforce can be a daunting experience for many university graduates, due, at least in part, to an increasingly competitive, and often unstable labour market. University students are increasingly challenged to complete traditional classroom learning while also developing vocational identities and the skills needed to adapt to the 21<sup>st</sup> century workforce. Career construction theory (Savickas, 1997, 2005) explains career development as a process of adaptation to career challenges, including key career transition skills. According to the model, successful career adaptation (adaptive results) is a function of relatively stable individual differences (adaptivity), psychosocial resources used to manage career-related challenges (adaptability resources), and the specific behaviours that people engage in to address occupational challenges (adaptive responses). Using a retrospective recall design, the current study tested some of the key theoretical assumptions of the career construction model of adaptation in the context of the school-to-work transition with a sample of 303 recent university graduates. The results showed that career adaptability resources mediated the relationship between adaptivity (proactive personality, cognitive flexibility) and adapting responses (proactive career behaviour, career construction behaviour). Career adaptability was also positively related to perceived career success and person-job fit perceptions; this positive relationship was partially mediated by proactive career behaviours. Overall, these findings support the career construction model of adaptation and contribute to a more comprehensive understanding of career construction theory and the school-to-work transition process.

*Keywords:* Career construction model of adaptation; Career adaptability; Career construction theory; school-to-work transition.

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## **Constructing a Career: An Investigation of the Career Construction Model of Adaptation in Recent University Graduates**

What it means to have a career has changed drastically over the past fifty years (Sommerlund & Boutaiba, 2007). Societal and economic shifts including globalization and increased automation have fundamentally impacted the way people approach work and careers (Hirschi & Koen, 2021; Sullivan & Baruch, 2009). Contemporary career patterns are increasingly characterized by mobility, and may involve several transitions across different occupations, employers, and work roles (Briscoe & Finkelstein, 2009; Sullivan & Baruch, 2009). Following the 9/11 attack in the United States, the economic recession of 2008, and most recently, the COVID-19 pandemic, political, social, and economic instabilities and uncertainties have been felt by the labour market. With career mobility on the rise, contemporary workers may often find themselves moving from one position to another, and potentially losing a sense of vocational self amid career transitions (Savickas, 1997). Recent theoretical advances have suggested that in this changing career environment, people need to construct their own meaning of work (e.g., Akkermans & Tims, 2016; Duffy et al., 2007; Hartung & Taber, 2013; Savickas, 2005). To be successful in the school-to-work transition, university graduates need to understand their vocational selves, while proactively developing skills and competencies that will help them find a suitable person-work fit (Koen et al., 2012; Savickas, 1997, 2005). The career construction model describes a process of career adaptation from readiness to results (Savickas, 1997, 2005; Savickas & Porfeli, 2012). The present study examined this model in the context of the school to work transition for a sample of recent university graduates.

The theoretical and empirical literature on the career development process is extensive and inter-connected (Duffy & Sedlacek, 2007; Holland, 1997; Savickas, 2005; Savickas, 2005;

Spurk et al., 2020; Super & Knasel, 1981). Career construction theory (Savickas, 1997, 2005, 2013) emerged out of vocational counseling as a way to explain career choices and vocational behaviours. Elements of career construction theory can be traced back to Holland's (1997) Theory of Vocational Personality, with its emphasis on the importance of a reciprocal relationship between people and their work environment and the importance of aligning personality and career interests. Aspects of Super's (1992) life-stage theory are also reflected in Savickas' (1997) career construction theory, including the notion that people go through vocational stages in life, where self-concepts, occupational preferences, and competencies change over time and develop because of experience. Career construction theory also focuses on the role of personal agency and self-efficacy as critical in the career development process (Lent et al., 1994). Central to these theories is the idea that individuals play an active role in shaping their career development, and person-centered variables such as vocational personality, self-concept, attitudes, and proactive behaviours are key to fully understanding career development.

Career construction theory does not assume a stable career context, nor a predictable career progression. Rather, the theory assumes a changing career landscape that is filled with uncertainty, and the need to adapt to changing work environments. Career construction theory seeks to understand career choices and vocational behaviours as they unfold within an increasingly unpredictable context (Savickas, 1997; Savickas, 2002; Savickas, 2005). From a career constructionist perspective, successful career development is a continuous process of adaptation that results from implementing self-concepts to work environments (Hirschi et al., 2015; Savickas, 2002, 2005; Savickas et al., 2009). Integrating the self, or personal needs with work-related social expectations is, according to the theory, necessary for successful adaptation to the work environment. The goal of adaptation is the alignment of a worker's personal needs

with the demands of the environment (Rudolph et al., 2017b). Successful adaptation should reflect the goodness of fit between the person and the work environment, and be manifested in indicators of adaptation results, such as work success, career satisfaction, and career development (Savickas, 2005; Savickas & Porfeli, 2012). One aim of the present research was to explicitly test the assumption that career adaptation is associated with person-job fit, providing empirical evidence related to this key aspect of the theory.

### **The Career Construction Model of Adaptation: An Overview**

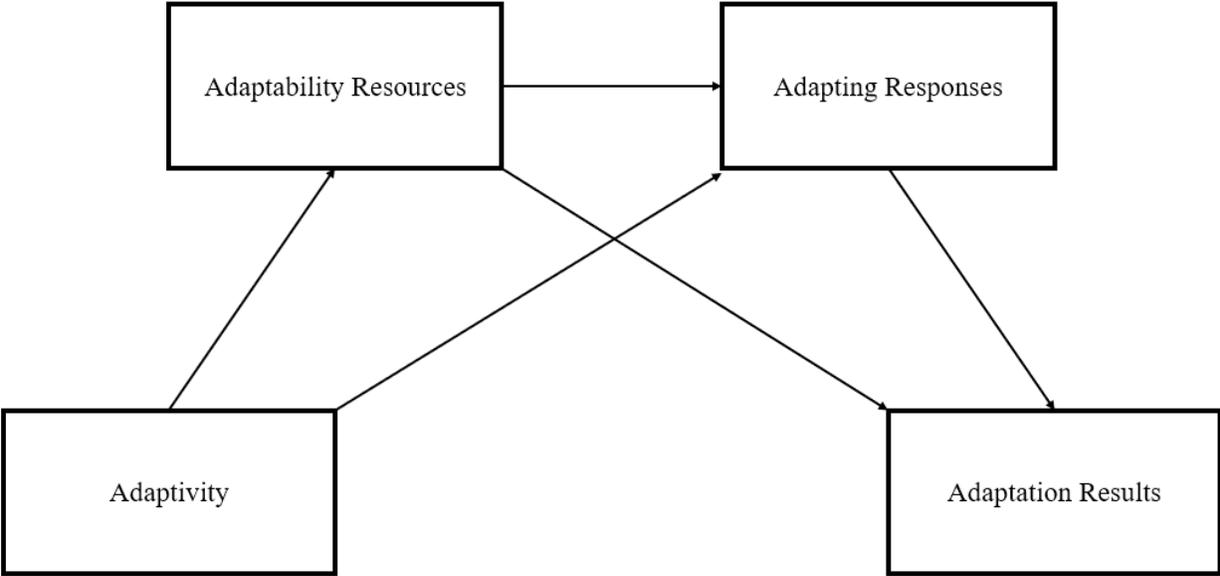
The career construction model of adaptation depicts the adaptation process presented in career construction theory (Savickas et al., 2018). As seen in Figure 1, the model lays out a sequence of interrelated adaptation processes, comprised of *adaptivity* (i.e., one's willingness or readiness to adapt), *adaptability resources*, also known as career adaptability (i.e., the ability or resources to adapt), *adapting responses* (i.e., behaviours or beliefs that help the individual manage the changing environment), and *adaptation results* (i.e., life and career outcomes). According to the model, adaptivity fosters adaptability resources, which influences adapting responses, and ultimately, the adaptation outcome or results (Hirschi et al., 2015; Rudolph et al., 2017b; Savickas, 2005).

#### ***Adaptivity***

Adaptivity is a relatively stable, context-general psychological trait that reflects the readiness and willingness to change (Savickas & Porfeli, 2012). Specifically, adaptivity is the tendency to take initiative, respond to career disequilibrium or transitions, meeting unfamiliar and ill-defined problems presented by vocational development tasks with fitting responses (Hirschi et al., 2015; Savickas & Porfeli, 2012). According to career construction theory, adaptivity reflects aspects of proactivity and flexibility; adaptivity fosters adaptability resources,

Figure 1

*Career Construction Model of Adaptation*



which in turn influence adapting responses (Savickas, 2005; Savickas et al., 2018). In the career development context, proactive individuals are more likely to be prepared for potential vocational changes, to explore and take initiative, and to act on opportunities to create work environments that fit with their vocational identities (Seibert et al., 1999; Tolentino et al., 2014). Similarly, individuals who are cognitively flexible are more adept to respond quickly and reshape their cognitive process to adequately respond to changing and uncertain situations (Spiro et al., 1994). Empirical evidence has consistently shown that proactive personality and cognitive flexibility can influence career adaptability across different populations (Cai et al., 2015; Chong & Leong, 2017; Jiang, 2017; Tolentino et al., 2014).

### ***Adaptability Resources***

Adaptability resources, also known as career adaptability, is defined as “the readiness to cope with predictable tasks of preparing for and participating in the work role and with the unpredictable adjustments prompted by changes in the work and working conditions” (Savickas, 1997, p.254). Along with adaptivity, career adaptability is the self-regulating resource needed for dealing with change (Savickas et al., 2018), and it is the psychosocial resource that connects the person to the environment (Savickas, 1997). Career adaptability is characterized by a set of attitudes and beliefs that shape the actual problem-solving strategies and coping behaviours individuals use in the career context, helping them to synthesize self-concepts with work roles (Savickas, 2005). The four facets of career adaptability are concern, control, curiosity, and confidence. *Concern* refers to one’s orientation to their vocational future – thinking about and caring about one’s vocational future is key to being prepared for managing career changes and challenges. *Control* enables the individual to take responsibility for their career development using self-discipline, effort, and persistence; *curiosity* refers to the extent to which one thinks

about possible options and alternative scenarios regarding their career; and *confidence* refers to one's self-efficacy to design their career and life roles (Savickas, 1997; Savickas & Porfeli, 2002). According to the model of adaptation, career adaptability mediates the relationship between adaptivity and adapting responses, and influences adaptation results through adapting responses (Savickas et al., 2018).

Since the beginnings of career construction theory (Savickas, 1997), research has largely focused on career adaptability – the centerpiece of the theory. Career adaptability is conceptualized as attitudes, behaviours, or competencies that individuals use to help them fit their vocational selves to their work environments (Savickas, 1997). Several studies have examined career adaptability, as a singular construct (e.g., Nilforooshan, 2020; Rudolph et al., 2017b), and as the separate dimensions of concern, curiosity, control and confidence (e.g., Hirschi et al., 2015; Tolentino et al., 2014). Career adaptability has been positively associated with work engagement (Rossier et al., 2012), objective and subjective career success (Rudolph et al., 2017a), employability (McArdle et al., 2007), general and professional well-being (Maggiori, et al., 2013), and lower levels of turnover intentions (Guan et al., 2015; Koen et al., 2010). In terms of the career decision-making process, studies have shown career adaptability to be positively related to higher levels of career decidedness (Nota et al., 2012), and lower career decision-making difficulties (Babarović & Šverko, 2018).

### ***Adapting Responses***

Adapting responses are behaviours and beliefs that people can use to deal with career development tasks and changing work conditions (Hirschi et al., 2015; Savickas, 2005; Savickas & Porfeli, 2012). According to the career construction model, once an individual is armed with the readiness to adapt to career challenges, and has summoned their adaptive resources, it is time

for action in the form of adapting responses (Savickas & Porfeli, 2012). Behaviours such as career exploration and career planning are actions people take in the course of responding productively to career tasks and challenges (Hirschi et al., 2015; Savickas & Porfeli, 2012). Similarly, occupational self-efficacy and career decision-making self-efficacy are beliefs that people hold in response to their ability to successfully navigate changing career conditions (Duffy et al., 2015; Hirschi et al., 2015).

Savickas et al. (2018) recently developed a specific measure of adapting responses – the Student Career Construction Inventory (SCCI), which identifies four specific adapting responses – crystalizing, exploring, deciding, and preparing. *Crystalizing* involves forming a self-concept relative to one's profession and specialty; *exploring* concerns the extent to which one gathers information about occupations; *deciding* captures the career choice one has made based on their vocational self-concept and the occupational information they have gathered; *preparing* is when one has committed to their career decision by actively pursuing relevant training to prepare for a position in that occupation (Savickas et al., 2018). The measure captures one's overall engagement in career construction behaviours (Savickas et al., 2018). On a facet level, each facet in the measure captures behaviours that address changing career conditions and making career-related choices (Savickas et al., 2018). As a composite, the four facets constitute a continuum that reflect the general factor of career development during the career exploration stage (Savickas et al., 2018).

Savickas et al. (2018) showed that higher engagement in adapting responses is related to higher career adaptability resources, higher commitment to an occupational choice and identification with that commitment, and more mature attitudes towards making career choices. Moreover, using the Student Career Construction Inventory as a measure of adapting responses,

Savickas and colleagues (2018) tested the model of adaptation, and confirmed that adapting responses mediated the relationship between adaptability resources and adaptation outcomes.

### ***Adaptation Results***

Adaptation results are the outcomes of career development. According to Savickas et al. (2018), adaptation results should reflect development in career and life, as well as a fit between the person and the environment. Indicators of positive adaptation results include success, satisfaction, and stability in one's career. Adaptation results have been measured in terms of career decidedness, career commitment, job satisfaction, and work success (Hirschi et al., 2015). Employability, turnover intentions, subjective well-being, career calling, and work engagement have also been used as indicators of adaptation results in previous research (Rudolph et al. (2017a). One adaptation result that has not received much attention in the literature is the concept of fit. According to the theory, career construction is a series of attempts to implement self-concept to work roles; the goal of career development is person-job integration, and adaptation results should reflect a fit between the person and their work roles (Savickas, 1997, 2005). While the idea of person-job fit as an outcome of adaptation is emphasized in career construction theory, few studies have examined person-job fit as an adaptation result (e.g., Guan et al., 2013). To better understand the career construction theory and the extent to which it explains school-to-work career transitions, there is a need to test the idea of person-job fit in the model as an adaptation result.

### **Career Construction Model of Adaptation: Getting to the Bigger Picture**

The majority of the empirical research related to career construction theory is focused on predicting individual outcomes, such as adaptability, or adaptation results. Very few studies, by

contrast, have examined the links between constructs in the model to provide a fuller test of the processes involved in career construction theory.

Although career adaptability has received a great deal of attention in the literature, most empirical research has only examined segments of the model, focusing mainly on career adaptability and its relationship to various adapting responses (Hirschi et al., 2015), or adaptation results (Rudolph et al., 2017a). Some recent studies have attempted to show the bigger picture associated with career construction theory. For example, in a longitudinal study of Chinese university graduates, Guan et al. (2013) found that job search self-efficacy mediated the link between career adaptability and adaptation results such as person-organization fit. Hirschi et al. (2015) conducted a six-month follow-up longitudinal study that examined links between three of the four main constructs in career construction theory. They examined the relationship between adaptivity, career adaptability, and adapting responses. Hirschi et al. (2015) showed that adaptivity (proactive personality) had a direct, positive effect on adapting responses (career planning, career exploration behaviours, decision-making difficulties, and occupational self-efficacy), and that this relationship was mediated by the four adaptability dimensions, with the concern resource showing the strongest link. Savickas and colleagues (2018), in a study designed to validate a measure of adapting responses (e.g., the Student Career Construction Inventory), tested segments of the career construction model of adaptation, and found that adapting responses mediated the relationship between adaptability resources and adaptation results.

Two recent meta-analyses (Rudolph et al., 2017a; 2017b) synthesized the results of 90 studies that looked at different segments of the career construction model of adaptation. In addition to showing the variety of ways in which adaptivity, adaptability resources, adapting responses and adaptation results have been operationalized, these studies also illuminate the

value in conducting more, fuller tests of the model. Studies such as this are moving the field closer to a fuller, more thorough test of career construction theory. With recent calls to examine the full model of adaptation (Šverko & Babarović, 2019) there is a need for researchers to examine all four dimensions of the model of adaptation to further expand our understanding of career construction theory. The current research examined all parts of the career construction model, including specific mechanisms within the model.

### **The Current Research**

The purpose of the present study was to test a full version of the career construction model of adaptation in the context of the school-to-work transition among recent university graduates. Specifically, this study (1) examined career adaptability as a mediator of the relationship between adaptivity and adapting responses, (2) examined adapting responses as a mediator between career adaptability and adaptation results, and (3) investigated the extent to which, as predicted by the model, person-job fit works as a worthwhile indicator of adaptation results. The results of the present study have the potential to advance our empirical understanding of the school-to-work transition and career adaptation processes.

### **Adaptivity and Adapting Responses: Proactive Personality, Cognitive Flexibility, Proactive Career Behaviours, and Career Construction Behaviours**

Adaptivity is defined by trait-like psychological characteristics that reflect a readiness and willingness to adapt and respond to ill-defined vocational development tasks, transitions, and traumas (Savickas, 2005). Indicators of adaptivity should therefore reflect aspects of proactivity or flexibility (Šverko & Babarović, 2019). Hirschi, Herrmann and Keller (2015) focused on proactivity as an indicator of adaptivity. Proactivity represents a relatively stable disposition to take initiative and change the environment (Crant, 2000), and is conceptually related to

adaptivity (Jiang, 2017). Chong and Leong (2017) examined cognitive flexibility as an indicator of adaptivity. Cognitive flexibility refers to an individual's awareness of available alternative options in any given situation, and their willingness to be flexible and to adapt to the situation (Martin & Rubin, 1995). Barak and Levenberg (2016) have also shown that cognitive flexibility and adaptability are closely related, such that cognitive flexibility is necessary for an individual to adapt to novel situations and to solve unfamiliar problems. Consistent with past research and with the definition of adaptivity proposed by Savickas (2013), the current study used proactive personality and cognitive flexibility as indicators of adaptivity.

Proactive personality is an individual's dispositional tendency to take actions to influence their environments (Crant & Bateman, 1993). Proactive people actively look for opportunities, take initiative and take charge, and persevere until they change the situation in their favour; they take it upon themselves to actively influence the environment to exert an impact on the world around them (Crant & Bateman, 1993; White, 1959). Taking action in the context of career development means engaging in proactive career behaviours. Such behaviours may include exploring career options, developing skills that will be useful in one's future career, and making connections with people in one's preferred field (De Vos et al., 2009; Savickas, 2018; Strauss et al., 2012).

Cognitive flexibility is an individual's cognitive capacity to flexibly respond to the changing situational demands (Martin & Rubin, 1995). Career construction theory contends that individuals who are proficient at cognitively synthesizing their abilities, individual traits, and environmental factors flexibly will be better at developing their vocational self-concepts. (Savickas, 2002). Research has shown that individuals who are cognitively flexible are more ready to adapt to new environmental conditions (Canas et al., 2003). Moreover, cognitive

flexibility can positively influence the acquisition of knowledge and skills in changing work contexts (Schmidt, et al., 1986). Adapting responses are the behaviours and beliefs that people use to deal with career development tasks and changing work conditions (Hirschi et al., 2015; Savickas, 2005; Savickas & Porfeli, 2012). Indicators of adapting responses examined in past research include career planning (Hirschi et al., 2015; Taber & Blankemeyer, 2015), career exploration (Savickas & Porfeli, 2012), occupational self-efficacy beliefs (Hirschi et al., 2015), and career decision-making self-efficacy (Duffy et al., 2015). Savickas et al. (2018)'s Student Career Construction Inventory (SCCI) measures engagement in specific career construction behaviours, in the form of crystalizing a vocational self-concept, exploring career options, deciding on a career choice, and preparing for such career choice by pursuing relevant training and development. Each of these indicators are partially representative of the many potential adaptive responses to a career challenge.

Certain proactive career behaviours are especially relevant for graduates making the school-to-work transition (e.g., skill development, networking, consultation) (De Vos et al., 2009; Spurk et al., 2015; Spurk et al., 2020). Proactive career behaviours are future-oriented behaviours intended to positively influence career outcomes, including planning, skill development, and building professional contacts (Claes & Ruiz-Quintanilla, 1998). Proactive career planning includes a cognitive component of visualizing future intentions with the goal of shaping one's future career, and a behavioural component of executing the planning through job searching, for example. Proactive skill development is self-directed behaviour focused on developing skills needed for future positions. Proactive consultation behaviour is seeking advice from others, such as engaging in discussions about work aspirations and future career goals. Proactive networking is interpersonal connection-building behaviour.

Building on the findings of past research, the current study examined proactive personality and cognitive flexibility within the broader context of the full career construction model of adaptability. Young adults who exhibit higher levels of proactive personality and cognitive flexibility were expected to translate this adaptivity into action. Specifically, adaptivity was expected to positively predict adapting responses including proactive career behaviors and career construction behaviours.

*H1: Adaptivity (proactive personality, cognitive flexibility) will be positively associated with adapting responses (proactive career behaviours and career construction behaviours).*

### **Adaptability Resources as a Mediator**

Career adaptability is an integral component of the career construction model of adaptation (Savickas, 2005). Adaptivity represents the readiness to take on career challenges, and adapting responses are the concrete actions taken to meet those challenges. Career adaptability is the necessary link between adaptivity and the behavioural response. It means having the resources needed to cope with and manage career challenges. Career adaptability is defined as a set of self-regulating resources that support positive, adaptive responses to career challenges. Within the career construction model of adaptation, these resources are concern, curiosity, control, and confidence (Savickas, 2005; Savickas & Porfeli, 2012). Translating one's potential for proactivity into actual proactive career behaviours requires adaptability resources. These are the critical elements that add fuel to the fire – the expected mediating variables. The four key adaptability resources include concern (preparing for one's future career and upcoming challenges), control (self-discipline and effort that is required in the work environment), curiosity

(interest in exploring different opportunities in the world of work), and confidence (belief in one's ability to meet challenges and solve problems).

Scholars have noted that the concept of career adaptability and proactive career behaviours overlap and are meaningfully related (Guan et al., 2017; Hirschi et al., 2015; Spurk et al., 2020). Both constructs support the notion of adapting to the environment and coping with the challenges pertinent to career development (Parker & Collins, 2008; Savickas & Porfeli, 2012; Seibert et al., 2001).

The current study presents proactive career behaviours as an indicator of adapting responses. Consistent with the standard definition of adapting responses (Savickas & Porfeli, 2012), proactive career behaviours are future-oriented and initiated to impact one's career either on an individual or an environmental level (Claes & Ruiz-Quintanilla, 1998). For university graduates, proactive career behaviours can include professional networking behaviours including seeking information, career advice, and support (Claes & Ruiz-Quintanilla, 1998). The end goal of engaging in proactive behaviours is to change one's situation to better fit their personal needs (Bate & Crant, 1993), which also align with the definition of achieving a match between the person and their work roles implicated in career construction theory (Savickas, 2002, 2005).

People who possess career adaptability resources may be more proactive in their career preparation and exploration and are more likely to achieve better career outcomes (Hirschi et al., 2015; De Vos et al., 2009). The model of adaptation contends that adaptability resources are positively related to adapting responses, and also mediate the relationship between adaptivity and adapting responses (Hirschi et al., 2015; Savickas et al., 2018; Šverko & Babarović, 2019). To this end, the current study postulates that career adaptability will be positively related to

proactive career behaviours and career construction behaviours, and career adaptability will mediate the relationship between adaptivity and these indicators of adapting responses.

*H2: Adaptability resources (career adaptability) will mediate the relationship between adaptivity (proactive personality, cognitive flexibility) and adapting responses (proactive career behaviours and career construction behaviours).*

### **Adaptability Resources and Adaptation Results: Career Adaptability and Career**

#### **Outcomes**

Adaptation results are indicators of positive career development - successful adaptation to career challenges. When there is a good fit between the individual and the work environment, they experience career success, satisfaction, and stability (Savickas et al., 2018). Past research has conceptualized successful adaptation results as work engagement (Rossier et al., 2012), employability (McArdle et al., 2007), career satisfaction (Chan & Mai, 2015; Zacher & Griffin, 2015), organizational commitment (Ito & Brotheridge, 2005), and low turnover intentions (Chan & Mai, 2015; Rudolph et al., 2017b).

A significant amount of the research on career construction theory has examined the relationship between adaptability resources and adaptation results. In terms of career outcomes, career adaptability has been positively associated with objective and subjective career success (Rudolph et al., 2017a), work engagement (Rossier et al., 2012), employability (McArdle et al., 2007), general and professional well-being (Maggiori et al., 2013), and intentions to stay with the organization (Guan et al., 2015; Koen et al., 2010). In the current research, I examined adaptation results that are fitting indicators of a successful transition from university to the workplace, while explicitly probing the theorized link between adaptation and person-job fit. Specifically, I considered a balance of both positive (perceived career success, person-job fit

perception) and negative (turnover intentions) career development outcomes as adaptation results of the school-to-work transition.

*H3a: Adaptability resources (career adaptability) will be positively associated with positive adaptation results (perceived career success, person-job fit perception).*

*H3b: Adaptability resources (career adaptability) will be negatively associated with negative adaptation results (turnover intention).*

### **Adapting Responses as a Mediator: Adaptability-Adaptive Responses-Adaptation Results**

The path from readiness to meet career challenges (adaptivity) to positive career outcomes (adaptation results) must go through the initial development of concern, curiosity, control and confidence (adaptability resources), followed by specific, planful, proactive career behaviours and career construction behaviours (adapting responses). A number of career outcomes have been examined in the context of career construction theory. In the present study, I consider perceived career success, person-job fit, and turnover intentions as career outcome indicators of adaptation results.

#### ***Perceived Career Success***

Perceived career success is an important indicator of a successful school to work transition because it captures what personally meaningful careers are and how one experiences their own career success (Ng & Feldman, 2014). Numerous studies have shown a positive relationship between career adaptability and subjective measures of career success (e.g., Haenggli & Hirschi, 2020; Ng et al., 2014). Career success is also achieved through adapting responses. Specifically, through engaging in adaptive career construction behaviours and proactive career behaviours (De Vos et al., 2009; Savickas et al., 2018; Spurk et al., 2020). During periods of transition, adaptive graduates make career decisions based on what they know

about themselves and the occupation, and then committing to such choice by actively searching and pursuing relevant training pertinent to such occupations (Savickas et al., 2018), and achieve greater career success through planning, exploring, deciding, and implementing their career choice (Savickas et al., 2018). Graduates who exhibit higher levels of adaptability resources will be more likely to respond to adaptation by developing skill sets needed for their future work roles, and establishing network connections to consult about future careers, which will help them meet the demands of their new work roles and create more favourable career outcomes (De Vos et al., 2009; Li, Crant, & Liang, 2010). In this light, it is expected that the influence of career adaptability on perceived career success is mediated through adapting responses.

### ***Turnover Intention***

Turnover intention refers to an individual's expressed desire to leave an organization. Turnover intention often signals dissatisfaction with some aspect of the job, the organization, or both (Meyer et al., 2002). When individuals are not satisfied with their jobs, they are less likely to stay with the organization (Griffeth et al., 2000). Turnover intentions are the best predictors of actual turnover (Hom et al., 1984). In many cases, turnover is a negative outcome from both an individual and an organizational perspective. From a career constructionist perspective, career adaptability can help career prospects to derive positive meaning from their work, which can in turn, lower their intention to quit (Savickas, 2005). Indeed, there is a great deal of evidence to suggest that career adaptability is negatively associated with turnover intention (Chan & Mai, 2015; Ito & Brotheridge, 2005; Zhu et al., 2019). During the school-to-work transition, graduates who exhibit career adaptability resources may have an easier time adapting to new environments and feel more comfortable with their new work roles (Savickas 2005), and thus may be more likely to stay with their organization.

In a similar vein, proactive individuals are more likely to take initiative, create and capitalize on opportunities to turn the environment in their favour (Bateman & Crant, 1993). By adapting to the environment and proactively, creating favourable work opportunities, graduates who have entered the workforce may feel more comfortable and more satisfied with their work, and less likely to feel the need to quit. In this light, it was expected that the influence of career adaptability on intentions to stay is mediated through engagement in career construction behaviours and proactive career behaviours.

***Person-Job Fit: Needs-Supplies Fit and Person-Job Fit***

Person-job fit as discussed in the context of career construction theory is generally about the fit between the vocational self-concept and work roles. Successful adaptation involves a complimentary fit between the person's need for expression of their vocational self-concepts, and a work role that supplies such need (Davis, 2006; Savickas, 2005). Career construction theory emphasizes the notion of fit between the person and the work role (Savickas, 1997; Savickas, 2003), however, the idea of fit has been mostly an abstract concept in the theory. Despite fit being a prominent construct in career construction theory, very few studies have explicitly examined fit as an adaptation result. A notable exception is a three-month longitudinal study of career adaptability in Chinese university graduates' job search process (Guan et al., 2013). These researchers found that career adaptability was a positive predictor of person-organization fit, needs-supplies fit, and demands-abilities fit among graduates who successfully obtained employment. In the current study, person-job fit is operationalized as a needs-supplies fit and demands-abilities fit to ensure that relevant aspects of fit are captured. The current study may further contribute to our understanding of the links between adaptability and fit outcomes by examining these relationships in the context of the full career construction model.

**Needs-supplies fit perception.** Needs-supplies fit perceptions are “judgments of congruence between employees’ needs and the rewards they receive in return for their service and contributions” (Cable & DeRue, 2002). Put simply, needs-supplies fit is about whether the job is able to meet the employee’s needs, broadly defined. For the recent graduate, needs might range from financial rewards and compensation to finding a work environment that facilitates self-expression, personal and professional growth (Savickas, 2005; Davis, 2006). Such needs can be met by the organizations through the provision of opportunities, training and development, and promotions (Cable & Edwards, 2004).

Career adaptability resources promote graduates’ engagement in adapting responses, where graduates crystalize their vocational self-concepts, exploring occupations that fulfill the need for expression of their vocational self-concepts, and implementing such self-concepts to their work roles. To this end, we expect career adaptability resources to promote adapting responses, which promote needs-supplies fit.

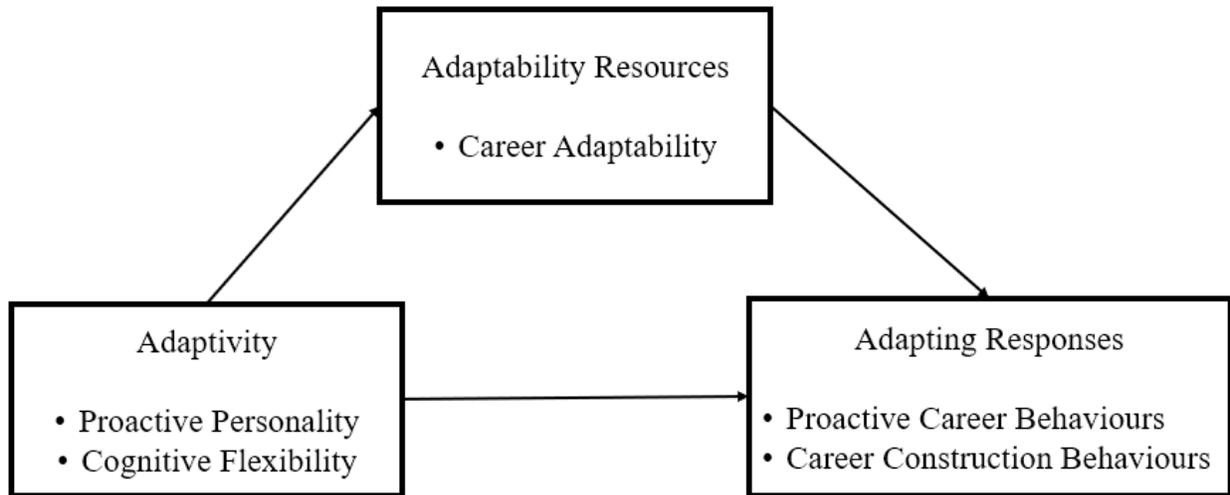
**Demands-abilities fit perception.** Demands-abilities fit concerns whether the demands and responsibilities of a job matches the contributions and expectations of the person (Brkich et al., 2002). Demands-abilities fit is achieved when individuals possess the knowledge, skills, abilities and other characteristics required to meet or exceed job demands (Cable & DeRue, 2002). During school-to-work transitions, graduates need to make informed and adaptive career decisions regarding their future careers by developing required skills, competencies, and abilities to fit with the demand of future work roles (Savickas, 1997, 2005; Savickas & Porfeli, 2012); the result of such successful implementation of one’s vocational self-concept to the work roles is a match between the person and the work environment (Savickas, 1997, 2005). Demands-abilities fit is proposed as an indicator of person-job fit because career decision-making during career

transition is most closely reflected by a match between individual's characteristics and the job requirements and responsibilities (Singh & Greenhaus, 2004).

As graduates go about developing these skills, abilities, and competencies, they are implementing their self-concepts by being more aware of their strengths and capabilities and adapting to the work environment by fitting their abilities with jobs that demand it (Savickas, 2003, 2005; Singh & Greenhaus, 2004), thus, demands-abilities fit is achieved. To this end, we expected career adaptability resources to promote adapting responses, which in turn should promote demands-abilities fit perceptions.

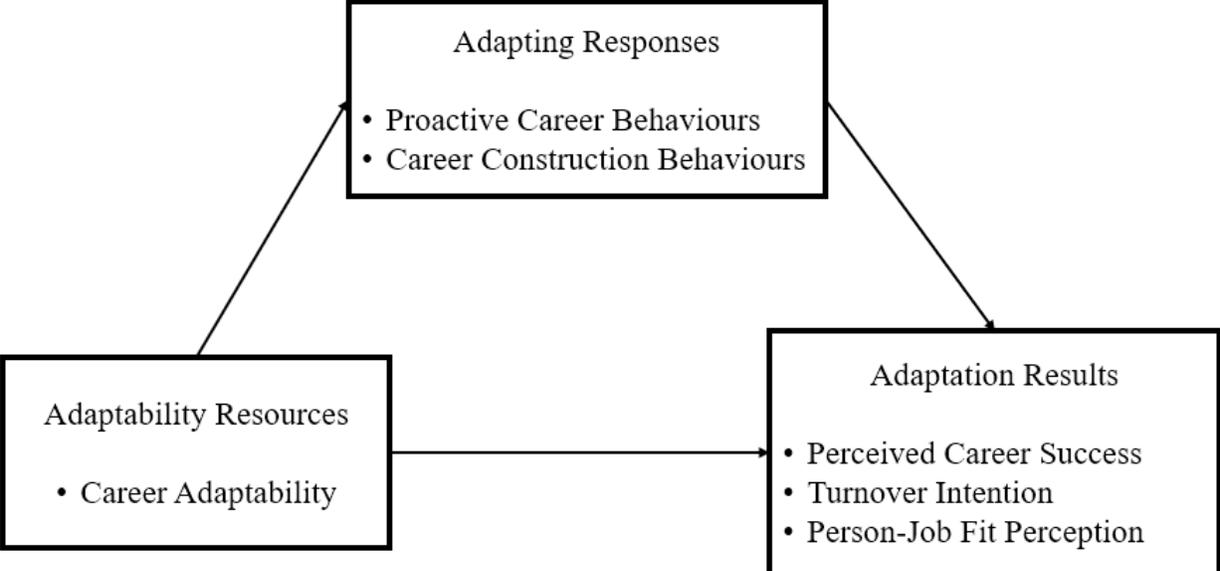
*H4: Adapting responses (proactive career behaviours and career construction behaviours) will mediate the relationship between adaptability resources (career adaptabilities) and adaptation results (perceived career success, turnover intention, person-job fit perception).*

Figures 2 and 3 show the proposed mediation models of career adaptability that were tested in this study, including the indicators that were used for each theoretical construct.

**Figure 2***Proposed Mediation Model 1*

**Figure 3**

*Proposed Mediation Model 2*



## Method

### Participants

A sample of 303 participants was recruited through Amazon Mechanical Turk (MTurk) panels. Amazon MTurk is a well-known online crowdsourcing platform, and it has been used by various schools and organizations for its online survey services. Of these 303 participants, one hundred ninety-one participants identified as male (63.5%) and 110 identified as female (36.5%). The majority of the participants identified as Caucasian (63.8%), followed by African American/African Canadian (9.6%), African (9.0), Hispanic (7.6%), Asian (5.3%), Biracial (1.7%), Multiracial (1.3%), Indigenous (0.7%), Middle Eastern (0.7%), and Other (1.3%). Participants' ages ranged from 19 to 60 years old, with an average age of 30.82 years ( $SD = 8.37$ ) and a median age of 29 years old.

About a third of the participants had earned a Bachelor of Science (35.2%), followed by Bachelor of Arts (21.6%), Bachelor of Computer Science (16.6%), Bachelor of Engineering (9.3%), Bachelor of Commerce (8.6%), Bachelor of Social Work (4.3%), and other Bachelor degrees (4.4%). The average Grade point average (GPA) was 10.21 ( $SD = 1.46$ ), equivalent to an A- letter grade. The majority of participants had started a job soon after graduating from university (92%). Of those who did not immediately start working after graduation, most found a job between 3 to 6 months after graduation (45.8%), about a third of them found a job 6 months to a year after graduation (33.3%), very few found a job within three months after graduation (0.3%), or a year or more after graduation (1.3%). Most of the participants are currently working full-time (83.4%), and the majority of participants reported working in their field of specialty (86.0%).

**Procedure**

To ensure the quality of MTurk data, several measures were taken to improve the reliability of the dataset. First, it was mandated that participants have at least 98% MTurk approval rating, and have successfully completed more than 100 tasks on MTurk; participants' MTurk approval rates are acquired through consistent positive feedback from previous survey requestors. Second, it was mandated that participants must reside in North America (United States, Canada, or Mexico); participants' IP addresses were examined to ensure the mandate was met, and to prevent multiple entries from the same participant.

To be eligible for the study, participants had to meet three initial screening criteria: (1) Must have a bachelor's degree from a North American university (Canada, U.S., or Mexico), (2) must have graduated within the last three years (from 2018 to present), and (3) must be currently employed. Respondents who met these inclusion criteria were asked to provide their informed consent to participate in the main study. Upon consent, participants were directed to the online survey and informed how they would be compensated through MTurk for their participation. Participants who did not meet these criteria were redirected to the debriefing page and were not compensated for the study. The survey comprised of two sections. The first section (retrospective recall) asked the participants to think back to their graduating year of their undergraduate degree and rate (1) the extent to which they were willing to adapt and take actions to influence the environment, and change the situation in their favour (proactive personality, cognitive flexibility), (2) the extent of their resources or abilities to cope with anticipated tasks or transitions to the workforce (career adaptability resources), and (3) the extent to which they engaged in various adapting behaviours prior to organizational entry (engagement in career construction behaviours, proactive career behaviour).

The second section asked participants to think about the present and rate (1) the extent to which they are satisfied with their current career (perceived career success), (2) how often they think about leaving their current job (turnover intentions), and (3) their perception of the degree of congruence between themselves and their job (person-job fit perceptions). Finally, participants were asked to provide their demographic information (e.g., gender, age, ethnicity, GPA).

## **Measures**

### ***Proactive Personality***

Proactive personality was assessed using Seibert, Crant, and Kraimer's (1999) 10-item version of Bateman and Crant's (1993) original 17-item Proactive Personality Scale (PPS; Seibert et al., 1999). Participants were asked to rate their willingness to adapt and proactively influence the environment. A sample item from this measure is "I was constantly on the lookout for new ways to improve my life". Each item was measured on a 7-point Likert scale, ranging from 1 "*Strongly disagree*" to 7 "*Strongly agree*". The current study showed a Cronbach's alpha of .88.

### ***Cognitive Flexibility***

Cognitive flexibility was assessed using Martin and Rubin's (1995) 12-item Cognitive Flexibility Scale. Participants were asked to rate the extent to which they were cognitively flexible with their behaviours. A sample item from this measure is "I have many possible ways of behaving in any given situation". Each item was measured on a 5-point Likert scale, ranging from 1 "*Strongly disagree*" to 5 "*Strongly agree*". The current study showed a Cronbach's alpha of .73.

### ***Career Adaptability Scale***

Career adaptability was assessed using Savickas and Porfeli's (2012) 24-item Career Adapt-Abilities Scale (CAAS). Participants were asked to think back to their graduating year in their undergraduate degree and rate their career adaptability resources prior to organizational entry. Phrases used in the scale were adapted using past tense to match with the retrospective nature of this study. This measure assessed four career adaptability resources - concern, control, curiosity, and confidence. *Concern* measures the extent an individual looks ahead and prepares for the future. A sample item from this subscale is "Planned how to achieve my goals". *Control* measures the extent to which an individual is responsible for shaping themselves to prepare for the future. A sample item from this subscale is "Took responsibility for my actions". *Curiosity* measures the extent to which an individual think about themselves in various possible scenarios. A sample item from this subscale is "Became curious about new opportunities". *Confidence* measures the individual's confidence to actualize their career choices. A sample item from this subscale is "Overcame obstacles". Each subscale will be measured on a 5-point Likert scale ranging from 1 "Not strong" to 5 "Strongest." The current study showed a Cronbach's alpha of .93.

### ***Proactive Career Behaviour***

Proactive career behaviour was assessed using Strauss et al.'s (2012) 13-item Proactive Career Behaviour scale. Participants were asked to think back to their graduating year in their undergraduate degree and rate the various proactive career behaviours they undertook prior to organizational entry. Phrases used in the scale were adapted using past tense to match with the retrospective nature of this study. This measure assesses four types of proactive career behaviour. *Proactive career planning behaviour* measures initiatives and interventions that shape

future careers. A sample item from this subscale is “I have planned what I wanted to do in the next few years of my career.” *Proactive skill development* measures initiatives and interventions that lead to mastery of various tasks involved in one’s occupation. A sample item from this subscale is “I had developed skills which may not be needed so much now, but in future positions.” Proactive career consultation measures the initiatives and interventions that seek information, advice or help from others. A sample item from this measure includes “I had made my supervisor aware of my work aspirations and goals.” Proactive networking behaviour measures the initiatives and interventions that build interpersonal networks in which to seek information, advice or help. A sample item from measure is “I had built networks of contacts or friendships with colleagues to obtain information about how to do my work or determine what is expected of me.” Each subscale was measured on a 5-point Likert scale ranging from 1 “*Disagree strongly*” to 5 “*Agree strongly*.” Overall, this measure has shown excellent consistency, Cronbach’s alpha in the current study was .89.

### ***Career Construction Behaviours***

Career construction behaviours were assessed using Savickas et al.’s (2018) 25-item Student Career Construction Inventory (SCCI). Using a 5-point Likert scale ranging from 1 “*I have not yet thought much about it*” to 5 “*I have already done this*”, the overall scale measures engagement in adapting responses, while the five facets capture specific career construction behaviours. An example of an item from this scale is “Forming a clear picture of my personality”. Overall, this measure has shown excellent internal consistency reliability, with a Cronbach’s alpha in the current study of .94.

***Perceived career success***

Perceived career success was assessed using Greenhaus, Parasuraman and Wormley's (1990) 6-item Perceived Career Success scale. This has been one of the most widely used measures in the subjective career success literature (Park 2010). Using a 5-point Likert scale ranging from 1 "Do not agree at all" to 5 "Agree completely", respondents indicate the extent to which they are satisfied with various aspects of their current career progress and success. An example of an item from this scale is "I am satisfied with the progress I have made toward meeting my overall career goals". This scale was found to have a high level of internal consistency, with the current study yielding a Cronbach's alpha of .87.

***Turnover Intention***

Turnover intention was assessed using Bothma and Roodt's (2013) 6-item Turnover Intention Scale. Participants were asked to report the extent to which they intended to leave their current job or organization on a 5-point Likert scale ranging from 1 "Never" to 5 "Always". Some sample items include "How often do you dream about getting another job that will better suit your personal needs?" and "How often have you considered leaving your job?". The scale in the current study showed a Cronbach's alpha of .69, which is slightly below typically acceptable levels.

***Person-Job Fit Perception***

Person-job fit perception was assessed by combining the 3-item needs-supplies fit perception measure developed by Cable & DeRue (2002) and the 3-item demands-abilities fit perceptions measure developed by Cable & Judge (1996). Both scales were previously used in a study of person-job fit (Cable & DeRue, 2002). Participants were asked to report their perception of fit between themselves and their job. An example item for need-supplies fit is "There is a

good fit between what my job offers me and what I am looking for in a job”. An example item for demands-abilities fit is “The match is very good between the demands of my job and my personal skills”. Items were rated on a 7-point Likert scale ranging from 1 “*Strongly disagree*” to 5 “*Strongly agree*”. This scale was found to have a high level of internal consistency, with a Cronbach’s alpha of .85.

### ***Attention Check Item***

An attention check item was used to improve data quality. Participants were asked to select “*Strongly disagree*” on one item in the survey to check if they were being attentive filling out the survey. Participants who chose the incorrect response to this item were excluded from statistical analyses.

### ***Demographics***

Participants were asked to report their age, gender, ethnicity, GPA, whether they had CO-OP or internship experience during their undergraduate degree, whether they are working full-time or part-time, and their seniority level (e.g., entry level, mid-level, senior level) at their current position.

## **Results**

### **Preliminary Analyses**

#### ***Data cleaning***

First, the data were examined for missing responses. Missing responses were replaced with the variable mean. When a participant was missing over twenty percent of the data for a single scale, the scale score for that case was excluded from the analysis. Respondents that did not correctly answer the attention check were also excluded from analyses. There was only one case of missing data in the cognitive flexibility variable. Little’s missing completely at random

test (MCAR) was used to assess whether the data was missing completely at random. The test revealed a non-significant chi-square value of 37.98  $df = 103$ ,  $p = 1.0$ , indicating that the data were missing completely at random (Little, 1988). The missing value was therefore replaced by the serial mean.

### ***Data exemption***

An initial 379 participants met the inclusion criteria of having obtained a bachelor's degree or equivalent from a university in North America (Canada, U.S.A. or Mexico) within the last three years (2018 to present), and currently are employed (part-time or full-time). Forty-four participants did not answer the attention check correctly, and 15 participants completed the survey too quickly (four minutes or less). These cases were excluded from the initial sample. The sample size after data exemption was 320.

### ***Extreme outliers***

Extreme values ( $\pm 3.30$  standard deviations away from a scale mean) were deemed outliers (Tabachnick and Fidell, 2007), and were subsequently removed from the data. A total of 17 outliers were identified and removed (4 within the age variable, 3 within GPA, 3 within proactive career behaviour, one within proactive personality, three within perceived career success, and three within demands-abilities fit perceptions).

Mahalanobis distance assessed the influence of multivariate outliers that may be present in the data. Mahalanobis distance follows a chi-squared distribution and the degrees of freedom equates to the number of independent variables entered to the regression (Tabachnick & Fidell, 2007). Mahalanobis distance scores were generated from multiple regression using predictor (cognitive flexibility, proactive personality) and mediator (career adaptability). Based on a chi-squared distribution at  $p = .001$  and  $df = 5$ , a chi-square value of 20.52 was used as a cut-off

criterion for excluding multivariate outliers. No outliers were detected in this regression. Mahalanobis distance was then generated using predictor (career adaptability) and mediators (proactive career behaviours, career construction behaviours). Based on a chi-squared distribution at  $p = .001$  and  $df = 5$ , a chi-square value of 20.52 was used as a cut-off criterion for excluding multivariate outliers. Two outliers exceeded the cut-off limit and were subsequently removed from the dataset. After the removal of outliers, the remaining 303 cases were used to perform all subsequent analyses.

Due to the wide range of reported ages (19 to 60 years), a data split was performed to divide the dataset between those who are younger than 22 years old, and those who are not. While many participants may have obtained their undergraduate degree at an older age, it is less likely for those who are younger than 22 to have obtained an undergraduate degree. Therefore, it was important to examine how the regression estimate would change when those who are younger than 22 years of age were included or excluded from the analyses. There was a total of seven cases ( $N = 7$ ) where the reported age was less than 22 years. Regression analyses were conducted separately on adaptation responses and adaptation results, with and without those who younger than 22 years of age. Regression analyses showed very little change in regression estimates when these cases were excluded. Because the inclusion of these cases did not alter the interpretation of the results, cases of younger than 22 years of age were retained for all subsequent analyses.

### ***Assumption Checks***

**Normality.** Normality was assessed through visual examination of histograms of each of the variables and Q-Q plots. Each of the scales showed a relative symmetrical distribution on the histogram. Skewness and kurtosis values of the variables were also examined. Following

Tabachnick and Fidell's (2007) conservative guidelines for assumption of normality, skewness and kurtosis values greater than |2.0| may be problematic and raise concerns for further intervention. Each scale showed skewness and kurtosis values within Tabachnick and Fidell's (2007) recommended non-problematic range (less than |2.0|). The normal Q-Q plots showed a relatively normal distribution of residuals, and mostly clustered around the regression line of best fit. Given these patterns, the assumption of normality was met.

**Homoscedasticity.** Homoscedasticity was examined using standardized predicted values plotted against observed values, and examined for the presence of clusters, or fan shapes. Presence of cone or fan shapes in the residual plot output indicates heteroscedasticity, and patterns that resemble a "shotgun blast" indicate homoscedasticity. For proactive career behaviour, career construction behaviour, career adaptability, perceived career success, turnover intention, needs-supplies fit perceptions, and demands-abilities fit perceptions, these plots showed homoscedastic error variance, with patterns resembling a shotgun blast. This suggests that the variance of the residuals in the regression model are roughly the same for all data points, therefore, the assumption of homoscedasticity was met.

**Linearity.** Linearity was examined using standardized predicted residual values plotted against standardized residuals (*zpred vs. zresid* plot). The assumption of linearity between the predictors and outcomes is met if residuals are scattered throughout the plots. The *zpred vs. zresid* plot indicated that the standardized residuals within career adaptability, proactive career behaviours, career construction behaviours, turnover intentions, perceived career success, needs-supplies fit perceptions, and demands-abilities fit perceptions were relatively scattered throughout the plots. Given these patterns, the assumption of linearity was met.

**Multicollinearity.** Multicollinearity was tested using the variance inflation factor (VIF) among the hypothesized predictors. For the first model, hypothesized predictors (cognitive flexibility, proactive personality) and mediator (career adaptability) were entered into multiple regression analyses on proactive career behaviour and career construction behaviours separately. For the second model, hypothesized predictor (career adaptability) and mediators (proactive career behaviour, career construction behaviour) were entered to multiple regression analyses on perceived career success, turnover intentions, needs-supplies fit perceptions, and demands-abilities fit perceptions. According to Field (2013), tolerance below 0.2 and VIF values over 10 tend to indicate presence of multicollinearity. The highest VIF and lowest tolerance in the scales used was the proactive career behaviour scale, VIF = 1.95 and tolerance = .51. Tolerance and VIF values among all predictors and covariates were within the recommended range, indicating that the multicollinearity assumption was not violated.

### **Correlation and Descriptive Statistics**

Table 1 presents the means, standard deviations, and correlations between hypothesized predictors, outcomes, and covariates. In the first half of the model, the hypothesized predictors in the model – proactive personality, cognitive flexibility, and mediator (career adaptability), and outcomes (proactive career behaviours, career construction behaviours), were significantly and positively correlated with one another (i.e., correlations between .29 to .65). In the second half of the model, the hypothesized predictor – career adaptability, and mediators (proactive career behaviour, career construction behaviours), and outcomes (perceived career success, turnover intention, person-job fit perception) were significantly correlated to varying degrees (i.e., correlations between -.12 to .58). As expected, turnover intention, a negative career outcome, was significantly and negatively correlated with the predictor and mediators in the model (i.e.,

**Table 1.***Means, standard deviations, and correlations of measured variables*

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13
1. PP	5.20	.86	—												
2. CF	4.89	.73	.50**	—											
3. CA	3.57	.58	.54**	.29**	—										
4. PCB	3.95	.59	.65**	.39**	.62**	—									
5. CCB	3.63	.66	.53**	.43**	.59**	.62**	—								
6. PCS	3.86	.74	.40**	.14*	.46**	.49**	.38**	—							
7. TI	2.90	.67	-.14*	-.35**	-.12*	-.19**	-.26**	-.23**	—						
8. P-J Fit	5.32	.99	.44**	.20**	.47**	.45**	.39**	.58**	-.49**	—					
9. CO-OP	—	—	-.05	-.23**	.05	-.01	-.03	.19**	.09	.07	—				
10. Gender	—	—	-.13*	-.26**	.02	-.09	-.12*	-.00	.09	-.05	.05	—			
11. GPA	10.21	1.46	.08	.16**	.09	.11	.05	.08	-.06	.01	-.01	-.11	—		
12. Age	30.82	8.37	-.05	-.21**	.05	-.02	-.04	.11	.04	.05	.07	.06	-.04	—	
13. Seniority	—	—	-.00	.22**	.13*	.04	.04	.13*	.09	.02	.10	.00	-.07	.28**	—

Note.  $N = 303$ . \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ . PP = Proactive personality; CF = cognitive flexibility; CA = career adaptability; PCB = proactive career behaviour; CCB = career construction behaviour; PCS = perceived career success; TI = turnover intention; P-J Fit = person-job fit perception. Gender is dummy coded (1 = male, 0 = female); CO-OP experience is dummy coded (1 = yes, 0 = no). Seniority is dummy coded (1 = mid and senior level, 0 = entry level).

correlation between -.12 to -.26). Finally, in terms of demographic variables, having CO-OP experience during the undergraduate degree, gender, and seniority at work were significantly correlated with the some of the dependent variables in the model (i.e., correlation between .19 to .28). Having CO-OP experience during one's undergraduate degree and working in a more senior position were positively related to perceived career success (i.e., correlation from .13 to .19). Females were more likely to engage in career construction behaviours than males ( $r = -.12$ ). These demographic factors were then controlled for in all subsequent analyses for possible influence on the tested model.

### **Analytic Strategy**

#### ***Mediation Analysis***

Mediation analyses were conducted by using "Model 4" of the PROCESS Macro (Hayes, 2013) to test the direct and indirect effects of the variables in the proposed model. The PROCESS Macro for SPSS uses bootstrapping, a resampling method. The advantage of using bootstrapping is that it can increase power and decrease Type I error rates (Creedon & Hayes, 2015). Evidence for mediation can be established if the predictor on each outcome through the mediator differs from zero (Hayes, 2015). The bootstrapping process is repeated 10,000 times to determine the upper and lower confidence intervals limits at 95% confidence intervals. If zero is not in the interval, then we can be confident that the indirect effect is different from zero, and a mediation effect can be established.

To test hypothesis 1, Hayes' (2013) PROCESS Macro was used to test the direct effect of the predictor (proactive personality, cognitive flexibility) on each outcome (career construction behaviour, proactive career behaviour). To test hypothesis 2, Hayes' (2013) PROCESS Macro was used to test the indirect effect of the predictor (proactive personality and cognitive

flexibility) on each outcome (career construction behaviour, proactive career behaviour) through the mediator (career adaptability). To test hypothesis 3, Hayes' (2013) PROCESS Macro was used to test the direct effect of the predictor (career adaptability) on each outcome (perceived career success, turnover intention, person-job fit perception). To test hypothesis 4, Hayes' (2013) PROCESS Macro was used to test the indirect effect of the predictor (career adaptability) on each outcome (perceived career success, turnover intentions, person-job fit perceptions) through the mediator (career construction behaviour, proactive career behaviour).

Due to the relatively high number of hypotheses tested in the study, the Benjamini-Hochberg procedure was used to decrease false discovery rate (Benjamini & Hochberg, 1995). False discovery rate is the likelihood of making Type I errors in multiple hypothesis testing. Benjamini-Hochberg procedure is a way to control for false discovery rate in multiple hypothesis testing, especially when testing a large number of hypotheses; it is less stringent than controlling for familywise errors, allowing for more discoveries to be made, and can increase power (Haynes, 2013).

### **The Influence of Adaptivity on Adapting Responses**

*H1. Adaptivity (proactive personality, cognitive flexibility) will be positively related to adapting responses (proactive career behaviour, career construction behaviour).*

Mediation analyses were used to test the first hypothesis of the direct effects of proactive personality and cognitive flexibility (adaptivity) on proactive career behaviour and career construction behaviour (adapting responses), while controlling for gender, seniority at work, and co-op experience. The predictor direct effect results ( $c'$ ) are presented in Table 2 (proactive personality as predictor) and Table 3 (cognitive flexibility as predictor).

The hypothesized relationships were fully supported by the direct effect results. Adaptivity was positively related to adapting responses, after controlling for covariates. Specifically, proactive personality was positively associated with both proactive career behaviours,  $B = .30$ ,  $t(295) = 9.30$ ,  $p < .001$ , and career construction behaviours,  $B = .21$ ,  $t(295) = 5.23$ ,  $p < .001$ . The same pattern was observed for cognitive flexibility. Those with higher levels of cognitive flexibility tended to engage in more proactive career behaviours,  $B = .21$ ,  $t(295) = 5.32$ ,  $p < .001$ , and career construction behaviours,  $B = .26$ ,  $t(295) = 5.72$ ,  $p < .001$ .

### **Adaptability Resources Mediate the Relationship Between Adaptivity and Adapting Responses**

*H2: Adaptability resources (career adaptability) will mediate the relationship between adaptivity (proactive personality, cognitive flexibility) and adapting responses (proactive career behaviours and career construction behaviours).*

Within career construction theory, career adaptability is a key resource that people draw on to guide them in positive career development behaviours. To examine career adaptability as a mediator of the relationship between adaptivity (proactive personality, cognitive flexibility) and adapting responses (proactive career behaviour, career construction behaviour), four indirect mediation analyses were conducted, controlling for gender, seniority at work, and co-op experience. The results are presented in the indirect effect lines (*ab*) of Tables 2 and 3.

The results of the mediation analysis fully supported the Hypothesis 2 predictions. Specifically, there was an indirect effect of career adaptability on the relationship between proactive personality and proactive career behaviour,  $B = .15$ ,  $CI\ 95\% = [0.10, 0.19]$ . There was an indirect effect of career adaptability on the relationship between proactive personality and career construction behaviours,  $B = .18$ ,  $CI\ 95\% = [0.13, 0.24]$ . There was an indirect effect of

career adaptability on the relationship between cognitive flexibility and proactive career behaviour,  $B = .16$ ,  $CI\ 95\% = [0.10, 0.22]$ . There was an indirect effect of career adaptability on the relationship between cognitive flexibility and career construction behaviours,  $B = .16$ ,  $CI\ 95\% = [0.11, 0.23]$ . This finding suggests that after controlling for covariates, recent graduates who reported higher levels of proactive personality tend to exhibit higher levels of career adaptability, and engaged in more proactive career behaviours and career construction behaviours. Similarly, recent graduates who reported higher levels of cognitive flexibility tended to exhibit higher levels of career adaptability, and engaged in more proactive career behaviours and career construction behaviours.

**Table 2.**

*Mediation assessing the indirect effect of proactive personality on proactive career behaviour and career construction behaviours through career adaptability*

	Career adaptability ( <i>M</i> )		
	<i>B</i>	<i>SE</i>	<i>t</i>
Covariates			
Gender	.11	.06	1.94
CO-OP Experience	-.06	.07	-.08
Seniority	.16**	.06	2.81
Predictor effects on mediator ( <i>a</i> )			
PP	.37***	.03	11.34
Mediator effects on outcome ( <i>b</i> )			
CA to PCB	.40***	.05	8.26
CA to CCB	.50***	.06	8.16
Predictor direct effects on outcome ( <i>c'</i> )			
PP to PCB	.30***	.03	9.30
PP to CCB	.21***	.04	5.23
Indirect effects ( <i>ab</i> )			
	<i>B</i>	<i>BootSE</i>	95% CI
PP to PCB through CA	.15	.02	0.10, 0.19 <sup>a</sup>
PP to CCB through CA	.18	.03	0.13, 0.24 <sup>a</sup>
Model statistics			
	<i>R</i>	<i>R</i> <sup>2</sup>	<i>F</i> <i>df</i>
PP to PCB through CA	.73***	.55	70.81      5
PP to CCB through CA	.65***	.42	42.21      5

*Note.* N = 303. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ . <sup>a</sup> CIs not containing zero are considered significant at the 0.05 level. Gender is dummy coded (1 = male, 0 = female). CO-OP experience is dummy coded (1 = yes, 0 = no). Seniority is dummy coded (1 = mid and senior level, 0 = entry level). Confidence intervals at 95% are based on 10,000 bootstrapped samples. PP = proactive personality, CA = career adaptability, PCB = proactive career behaviour, CCB = career construction behaviour.

**Table 3.**

*Mediation assessing the indirect effect of cognitive flexibility on proactive career behaviour and career construction behaviours through career adaptability*

	Career adaptability ( <i>M</i> )			
	<i>B</i>	<i>SE</i>	<i>t</i>	
Covariates				
Gender	.14*	.07	2.08	
CO-OP Experience	.02	.08	.27	
Seniority	.24***	.06	3.73	
Predictor effects on mediator ( <i>a</i> )				
CF	.29***	.04	6.20	
Mediator effects on outcome ( <i>b</i> )				
CA to PCB	.56***	.05	12.07	
CA to CCB	.57***	.05	10.60	
Predictor direct effects on outcome ( <i>c'</i> )				
CF to PCB	.21***	.04	5.32	
CF to CCB	.26***	.05	5.72	
Indirect effects ( <i>ab</i> )				
	<i>B</i>	<i>BootSE</i>	95% CI	
CF to PCB through CA	.16	.03	0.10, 0.22 <sup>a</sup>	
CF to CCB through CA	.16	.03	0.11, 0.23 <sup>a</sup>	
Model statistics				
	<i>R</i>	<i>R</i> <sup>2</sup>	<i>F</i>	<i>df</i>
CF to PCB through CA	.68***	.46	51.01	5
CF to CCB through CA	.65***	.43	43.89	5

*Note.* N = 303. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ . <sup>a</sup> CIs not containing zero are considered significant at the 0.05 level. Gender is dummy coded (1 = male, 0 = female). CO-OP experience is dummy coded (1 = yes, 0 = no). Seniority is dummy coded (1 = mid and senior level, 0 = entry level). Confidence intervals at 95% are based on 10,000 bootstrapped samples. CF = cognitive flexibility, CA = career adaptability, PCB = proactive career behaviour, CCB = career construction behaviour.

### **The Influence of Adaptability Resources on Adaptation Results**

*H3a: Adaptability resources (career adaptability) will be positively associated with positive adaptation results (perceived career success, person-job fit perception).*

*H3b: Adaptability resources (career adaptability) will be negatively associated with negative adaptation results (turnover intention).*

According to career construction theory, career adaptability gives people the tools they need to engage in proactive career development which in turn leads to positive career outcomes. With Hypothesis 3, I examined the direct effects of adaptability resources (career adaptability) on adaptation results (perceived career success, person-job fit, turnover intentions), while controlling for co-op experience, gender, and seniority at work. The results of these analyses are presented in the direct effect lines ( $c'$ ) of Table 4, 5, and 6.

Hypothesis 3a was supported by the study results, but Hypothesis 3b was not. As shown in Table 4, after controlling for covariates, career adaptability was positively associated with perceived career success,  $B = .31$ ,  $t(294) = 3.60$ ,  $p < .001$ . Moreover, those with high levels of career adaptability tended to report higher levels of person-job fit,  $B = .51$ ,  $t(294) = 4.26$ ,  $p < .001$  (see Table 6). Career adaptability was not, however, related to turnover intentions,  $B = -.08$ ,  $t(295) = .94$ ,  $p = .35$ . Overall, these findings suggest that recent university graduates who exhibit high levels of career adaptability during their undergraduate degree experience higher levels of career success and person-job fit following the school-to-work transition. But career adaptability did not play a role in turnover intentions.

### **Adapting Responses Mediate the Relationship between Adaptivity Resources and Adaptation Results**

*H4: Adapting responses (proactive career behaviours and career construction behaviours) will mediate the relationship between adaptability resources (career adaptabilities) and adaptation results (perceived career success, turnover intention, person-job fit perception).*

It was predicted that the association between adaptability resources and longer-term adaptation results such as career success and fit perceptions would be mediated by adapting responses such as proactive career behaviours. This hypothesis was only partially supported by the study results. The total indirect effect of proactive career behaviour and career construction behaviour on the relationship between career adaptability and perceived career success was positive and significant,  $B = .22$ ,  $CI\ 95\% = [0.07, 0.33]$ . Although there was evidence that proactive career behaviours mediated the link between career adaptability on perceived career success (See Table 4),  $B = .18$ ,  $CI\ 95\% = [0.07, 0.29]$ , career construction behaviour did not mediate this relationship,  $B = .04$ ,  $CI\ 95\% = [-0.03, 0.12]$ .

A similar pattern was observed for person-job fit perceptions. The indirect effect of proactive career behaviour and career construction behaviour on the relationship between career adaptability and person-job fit perception was positive and significant,  $B = .19$ ,  $CI\ 95\% = [0.02, 0.30]$ . When examined separately, there was an indirect effect of proactive career behaviours on the relationship between career adaptability and person-job fit perceptions (See Table 5),  $B = .13$ ,  $CI\ 95\% = [0.02, 0.24]$ , but career construction behaviour did not have a significant indirect effect on this relationship,  $B = .06$ ,  $CI\ 95\% = [-0.02, 0.14]$ .

Due to the lack of association between career adaptability and turnover intention (see Table 6), mediation cannot be established, therefore the indirect effect of proactive career behaviour and career construction behaviour was not explored further.

Overall, these findings imply that after controlling for covariates, recent graduates who exhibited higher levels of career adaptability during their undergraduate degree tended experience higher levels of perceived career success and person-job fit following school-to-work transition, and this positive relation is mediated by proactive career behaviours.

**Table 4**

*Parallel mediation assessing the indirect effect of career adaptability on perceived career success through proactive career behaviour and career construction behaviour*

	Proactive career behaviour ( $M_1$ )			Career construction behaviour ( $M_2$ )		
	<i>B</i>	<i>SE</i>	<i>t</i>	<i>B</i>	<i>SE</i>	<i>t</i>
Covariates						
Gender	-.14*	.05	-2.50	-.18**	.05	12.67
CO-OP experience	.19**	.07	2.70	.00	.08	.05
Seniority	-.07	.05	-1.27	-.05	.06	-.76
Predictor effect on mediator ( <i>a</i> )						
CA	.64***	.05	14.11	.67***	.05	12.67
Mediator effect on outcome ( <i>b</i> )						
PCB to PCS	.35***	.09	4.06	-	-	-
CCB to PCS	-	-	-	.08	.07	1.09
Perceived career success (Y)						
Direct effect on outcome ( <i>c'</i> )	<i>B</i>		<i>SE</i>		<i>t</i>	
CA to PCS	.31***		.08		3.60	
Indirect effects ( <i>ab</i> )						
CA to PCS through PCB	.18		.06		0.07, 0.29 <sup>a</sup>	
CA to PCS through CCB	.04		.04		-0.03, 0.12	
Total indirect effect	.22		.05		0.07, 0.33 <sup>a</sup>	
Model Statistics						
	<i>R</i>		<i>R</i> <sup>2</sup>		<i>F</i>	
	.56		.32		22.60***	
					<i>df</i>	
					6	

*Note.* N = 303. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ . <sup>a</sup> CIs not containing zero are considered significant at the 0.05 level. Gender is dummy coded (1 = male, 0 = female). CO-OP experience is dummy coded (1 = yes, 0 = no). Seniority is dummy coded (1 = mid and senior level, 0 = entry level). Confidence intervals at 95% are based on 10,000 bootstrapped samples. CA = career adaptability, PCB = proactive career behaviour, CCB = career construction behaviour. PCS = perceived career success.

**Table 5**

*Parallel mediation assessing the indirect effect of career adaptability on person-job fit perception through proactive career behaviour and career construction behaviour*

	Proactive career behaviour ( $M_1$ )			Career construction behaviour ( $M_2$ )		
	<i>B</i>	<i>SE</i>	<i>t</i>	<i>B</i>	<i>SE</i>	<i>t</i>
Covariates						
Gender	-.14*	.05	-2.50	-.18	.06	-.29
CO-OP experience	.19**	.07	2.70	.00	.08	.05
Seniority	-.07	.05	-1.27	-.05	.06	-.76
Predictor effect on mediator ( <i>a</i> )						
CA	.64***	.05	14.11	.67***	.05	12.67
Mediator effect on outcome ( <i>b</i> )						
PCB to PJ Fit	.35**	.12	2.86	-	-	-
CCB to PJ Fit	-	-	-	.15	.10	1.42
Person-job fit perception (Y)						
Direct effect on outcome ( <i>c'</i> )	<i>B</i>		<i>SE</i>		<i>t</i>	
CA to PJ Fit	.51***		.12		4.26	
Indirect effects ( <i>ab</i> )	<i>B</i>		<i>BootSE</i>		95% CI	
CA to PJ Fit through PCB	.13		.06		0.02, 0.24 <sup>a</sup>	
CA to PJ Fit through CCB	.06		.04		-0.02, 0.14	
Total indirect effect	.19		.05		0.82, 0.30 <sup>a</sup>	
Model Statistics	<i>R</i>		<i>R</i> <sup>2</sup>		<i>F</i>	
	.52		.27		18.32***	
					<i>df</i>	
					6	

*Note.* N = 303. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ . <sup>a</sup> CIs not containing zero are considered significant at the 0.05 level. Gender is dummy coded (1 = male, 0 = female). CO-OP experience is dummy coded (1 = yes, 0 = no). Seniority is dummy coded (1 = mid and senior level, 0 = entry level). Confidence intervals at 95% are based on 10,000 bootstrapped samples. CA = career adaptability, PCB = proactive career behaviour, CCB = career construction behaviour. PJ Fit = person-job fit perception.

**Table 6**

*Parallel mediation assessing the indirect effect of career adaptability on turnover intention through proactive career behaviour and career construction behaviour*

	Proactive career behaviour ( $M_1$ )			Career construction behaviour ( $M_2$ )		
	<i>B</i>	<i>SE</i>	<i>t</i>	<i>B</i>	<i>SE</i>	<i>t</i>
Covariates						
Gender	-.14*	.05	-2.50	-.18	.06	-.29
CO-OP experience	.19**	.07	2.70	.00	.08	.05
Seniority	-.07	.05	-1.27	-.05	.06	-.76
Predictor effect on mediator ( <i>a</i> )						
CA	.64***	.05	14.11	.67***	.05	12.67
Mediator effect on outcome ( <i>b</i> )						
PCB to TI	-.10	.09	-1.10	-	-	-
CCB to TI	-	-	-	-.25**	.07	-3.25
Turnover Intention (Y)						
Direct effect on outcome ( <i>c'</i> )	<i>B</i>		<i>SE</i>		<i>t</i>	
CA to TI	.08		.09		.94	
Indirect effects ( <i>ab</i> )	<i>B</i>		<i>BootSE</i>		95% CI	
CA to TI through PCB	-.05		.56		-0.16, 0.05	
CA to TI through CCB	-.15		.04		-0.24, -0.06 <sup>a</sup>	
Total indirect effect	-.02		.06		-0.31, -0.95 <sup>a</sup>	
Model Statistics	<i>R</i>		<i>R</i> <sup>2</sup>		<i>F</i>	
	.30		.09		4.94***	
					<i>df</i>	
					6	

*Note.* N = 303. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ . <sup>a</sup> CIs not containing zero are considered significant at the 0.05 level. Gender is dummy coded (1 = male, 0 = female). CO-OP experience is dummy coded (1 = yes, 0 = no). Seniority is dummy coded (1 = mid and senior level, 0 = entry level). Confidence intervals at 95% are based on 10,000 bootstrapped samples. CA = career adaptability, PCB = proactive career behaviour, CCB = career construction behaviour. TI = turnover intention.

### **Discussion**

The purpose of this research was to investigate some of the key theoretical assumptions of the career construction model of adaptation in the context of the university-to-work transition. A full version of the career construction model of adaptation was tested. I examined career adaptability as a mediator of the relationship between adaptivity (proactive personality, cognitive flexibility) and adapting responses (proactive career behaviour, career construction behaviour). Adapting responses were tested as a mediator between career adaptability resources and adaptation results (perceived career success, turnover intention, person-job fit perception).

Several important findings emerged from this study. This study provided empirical support for the full career construction model of adaptation, including the mechanisms that contribute to adaptive career behaviours and, ultimately, positive career results. Those who possess adaptive traits, such as cognitive flexibility and proactive personality, were more likely to possess and utilize adaptability resources of concern, curiosity, control, and confidence in their career-related beliefs and behaviours. Those with adaptability resources were more likely to display adapting responses, or the kinds of career-focused behaviours that are associated with positive results, such as perceived person-job fit and career success. The findings from this study contribute to a growing body of literature on the career construction model of adaptation by providing a test of the full model, including an explicit test of person-job fit as an adaptive result. Previous research has focused almost exclusively on bivariate relationships within the model, or on predictors of a single element of the model. This study presented a more realistic portrayal of the career development process by testing a bigger-picture version of the career construction model, including key mediating variables.

By clearly establishing the role of career adaptability as a mediator of the relationship between readiness to adapt and successful adaptation outcomes, the results of the present study provide empirical support for a key aspect of career construction theory – the centrality of career adaptability. Career adaptability is a central concept in career construction theory, and the current research showed that career adaptability was a key mechanism facilitating a successful school-to-work transition for recent graduates. The role of personal agency and proactivity was also highlighted in the results from this study. In addition to adaptability resources, engaging in proactive career behaviours was a critical means by which recent graduates were able to successfully cope with the school-to-work career transition. Establishing proactive career behaviour as a key mediator in the model also represents an important contribution to the literature on career construction theory. Lastly, the results of the present study contribute to our understanding of the concept of fit in career construction theory. Although the concept of person-job fit is often alluded to in the literature on career construction theory, a key contribution of the present study was to explicitly measure and test person-job fit as an indicator of adaptation results within the career construction model. Indeed, our results suggested that perceptions of person-job fit are a useful indicator of adaptive results within the career construction model.

### **Career Construction: Leveraging Traits and Adapt-Abilities**

The lion's share of the research on the career construction model has focused on career adaptability as the 'starting point'. That is, most of the research in this area starts with career adaptability resources (concern, control, curiosity and confidence) and looks at adaptability as a predictor of career outcomes (Guan et al., 2015; Jiang, 2016). The question of where adaptabilities come from, or what kinds of traits or individual differences tend to promote adaptabilities and subsequent adaptive career behaviours has not received sufficient attention in

the career development literature. By taking a closer look at individual difference predictors of adaptability, this study has expanded our understanding of the broader processes involved in career development. Moreover, situating career adaptability as an essential mechanism between stable traits and career-related behaviours, allows us to see these relationships in a more detailed and nuanced way. The results of the present study show that successful career construction among university students was more likely among those who started with a proactive personality and cognitive flexibility. Students who possessed these traits also tended to go out there and work to set up conditions for career success such as building skills and networking. A key explanatory factor behind this relationship was students' ability to successfully use and leverage their own curiosity, concern, control, and confidence while they were completing their degrees. Proactive and flexible people, it seems, spent more time thinking about their futures and looking for new opportunities. Thoughts and behaviours that reflect concern and curiosity, then, tended also to result in other concrete behaviours such as career planning, and seeking advice from others about how to improve future work prospects.

The current study extended the literature on proactive personality by demonstrating that career adaptability mediated the relationship between proactive personality and adapting responses (proactive career behaviours, career construction behaviours). This means that university students who possess a greater willingness and capacity to change are able to leverage their enhanced levels of concern, control, confidence, and curiosity to respond to vocational tasks and challenges. Having these enhanced levels of career adaptability resources, students tended to respond to adaptation through engaging in various proactive career behaviours, such as career planning, network building behaviours, seeking career consultation, and proactive skill development behaviours. Moreover, those who possess these career adaptability resources were

more likely to make adaptive and informed career decisions based on their vocational self-concepts and occupational information. Those who were able to leverage their adaptability resources have the confidence and control to commit to their career choice and pursue relevant training to fulfil their career goals. In this regard, career adaptability resources work as the fuel needed to respond to various career challenges.

The current study also found that career adaptability mediated the relationship between cognitive flexibility and adapting responses (proactive career behaviours, career construction behaviours). Career construction theory contends that individuals who are proficient at integrating their skills, traits, and environmental factors flexibly will be more prepared to develop their vocational identity (Savickas, 2005). This may imply that individuals who possess the ability to think flexibly are more efficient at synthesizing information from various sources about their vocational self, which can help them clarify their vocational self-concepts and move closer to realizing their career goals. This finding supports the notion that cognitively flexible individuals are more ready to adapt to novel work conditions (Canas et al., 2003), and highly flexible individuals have more cognitive capacity to change or shift responses in relation to changing situations (Martin & Rubin, 1995). A plausible explanation for the observed positive relationship is that cognitively flexible individuals are able to approach uncertainties and vocational tasks in different ways that can help them achieve their vocational goals. For example, in the context of COVID-19, many people found themselves unexpectedly working from home, including, in some cases, starting a new job ‘virtually’. Cognitive flexibility would likely be especially useful in this kind of situation, allowing individuals to flexibly switch between different strategies to adapt to the unfamiliar demands of working remotely.

The current study showed that proactive personality and cognitive flexibility both foster career adaptability resources, which in turn influences proactive career behaviours and career construction behaviours. This finding is consistent with those from a recent study by Green and colleagues (2020) which showed that career adaptability resources can be developed through training in proactivity. University students who received training on proactivity and career adaptability displayed higher levels of engagement in career adapting responses (Green, Noor, & Hashemi, 2020). If career adaptability resources can be fostered through training in proactive personality and cognitive flexibility, students may further improve their career adapting responses. These findings highlight the importance of being proactive and flexible in contemporary careers (Fuller & Marler, 2009; Thomas et al., 2010). Specifically, in the context of COVID-19, many people were recently faced with different vocational challenges, such as working from home, and dealing with change in the job market. Being proactive and flexible can be especially beneficial in the context of COVID-19, because proactive and flexible individuals are able to leverage their career adaptability resources to respond to career development tasks by engaging in various adapting behaviours. Those who are proactive are more future-oriented; they may learn about the impact of COVID-19 on the job market and on people's work arrangements ahead of time, and prepare their careers accordingly. In addition, being flexible allows them to reinvent themselves and adapt to the demands of contemporary careers.

The current study showed that proactivity, flexibility, and adaptability play an important role in successful navigation of the school-to-work transition. These may also be important lessons for organizations involved in post-secondary education and training. Indeed, there has been a recent push toward greater accountability among universities to produce career-ready candidates (Holmes, 2013). Given that career adaptability is key to a successful school-to-work

transition, universities should implement specialized courses that aim to foster proactivity, flexibility, and adaptivity. According to a meta-analysis on experiential learning and learning outcomes, learning outcomes were significantly superior when classes employed experiential learning strategies (Burch et al., 2019). Universities could incorporate experiential learning in the curriculum, putting emphasis on developing students' proactivity and flexibility. For regular classes, educators could also invite professionals who are currently working, to give talks to student about the outlook of the job market, what kind of jobs they can expect, and how the course can help them to achieve their career goals. This could prompt students to think about the future and anticipate possible career outcomes based on what skills they have learned or could learn. In doing so, students may develop a more realistic expectation of their career future. From there, educators should also encourage students to reflect on their past school or work experience, and think about their long-term career plans, and come up with concrete strategies to achieve their career goals. By incorporating career construction activities into the curriculum, students may learn to be more proactive and flexible, have a clearer sense of their career future, and be more career-ready when they transition out of school and into the workforce (Strauss et al., 2012).

### **Career Adaptability: Key to a Successful School-to-Work Transition**

The transition from school to the workplace can be a daunting experience for many university students. Successfully transitioning from school to the workplace and achieving positive career outcomes is an important yet challenging step in the career development process. As the results of the present study show, career adaptability is an important predictor of positive adaptation results, and equipping students with career adaptability resources is key for a successful transition into the workplace. Specifically, recent university graduates who exhibited

higher levels of career adaptability during their undergraduate degree tended to experience higher levels of career success and better fit with their jobs when they entered the workforce.

This finding is consistent with many studies within the career development literature (e.g., Chan & Mai, 2015; Guan et al., 2013; Savickas, 2005; Zacher & Griffin, 2015).

The positive relationship between career adaptability and perceived career success is not surprising. Career adaptability resources are transactional competencies that represent an individual's willingness, skills, and approach to career-related tasks, and can help career prospects to successfully manage their career development, transitions, and adjustments to their new work roles (Savickas, 1997; Savickas & Porfeli, 2012). Savickas and Porfeli (2012) characterized career adaptability resources as a form of human capital, which can be accumulated over time through education, training, and work experiences. These resources are what fuels adapting responses, which in turn, produces positive career outcomes. This means that career adaptability, unlike personality traits, is more malleable and can be developed over time. Students who were able to develop career adaptability resources during their undergraduate years, through education, training, and relevant work experience, tended to experience a higher sense of career success when they transitioned into the workforce.

The positive relationship between career adaptability and person-job fit was also expected. This is because career adaptability highlight sets of attitudes and beliefs that allow the individual to synthesize their self-concepts with work roles (Savickas, 2005). Similar results were also found in a study using a sample of Chinese graduate students (Guan et al., 2013). In their study, students who exhibited higher career adaptability resources during their final year of graduate school were more concerned about their career future, more prepared for the difficulties they may experience during the job search, and ultimately, were more likely to find employment

that fits with their needs and also matches with their abilities and training (Guan et al., 2013). It is possible that undergraduate students may have very little familiarity with the job market and what is outside of their schoolwork. Career adaptability resources can be especially beneficial to undergraduate students as it can encourage them to be more future-oriented, and it can broaden their horizon (Savickas, 2003, 2005). Those who exhibit higher levels of career adaptability resources may be likely to think ahead and explore potential opportunities, and ultimately, find employment that matches with their vocational identity (Savickas, 2003, 2005).

The findings of this study suggest that university students may benefit from developing career adaptability resources as it appeared to promote person-job fit and perceived career success. Savickas (2005) suggests that career adaptability resources are malleable and can be improved through training in career planning, decision-making, career exploration, and problem-solving. Koen and colleagues (2012) demonstrated that career construction theory-based training in career adaptability resources can be effective and have a long-lasting effect. Students who received the training showed improved concern, control, and curiosity in students six months after the training (Koen et al., 2012). Therefore, universities could help students succeed in the school-to-work transition by including workshops aimed at developing career adaptability resources in the curriculum. For example, the workshop could start with students introducing themselves and talking about their career interests. This exercise could get the student to reflect on themselves, and learn more about themselves through exploration of their vocational self-concept. The workshop could also have the students to conduct job search activities. In doing so, students explore their career options and gather information about the job market. This exercise emphasizes the curiosity dimension of career adaptability resources. Then, have the students plan their career paths based on the information they know about themselves and the job market, and

make adaptive career decisions based on this information. This exercise aims to improve the concern and control dimensions of career adaptability. Lastly, the workshop could also introduce job interview role play activities. Having students practice interviewing skills could increase their confidence and help them to be more prepared for real job interviews. By introducing some or all of these suggested activities, institutions of higher education may help students to develop career adaptability resources.

Contrary to research expectations, career adaptability was not related to turnover intentions. The literature on the relationship between career adaptability and turnover intentions has been somewhat inconsistent and equivocal (Johnston, 2016). On one hand, some research suggests that all four dimensions of career adaptability resources are negatively related to turnover intentions (Omar & Noordin, 2013), and career adaptability is positively related to perceptions of person-job and person-organization fit (Ferreira & Coetzee, 2013). These findings suggest that higher career adaptability resources seemed to contribute to a stronger desire to stay in an organization. By contrast, Zacher et al., (2015) suggest that career adaptability resources are negatively related to overall career entrenchment. Spurk et al., (2015) argue that individuals with high career adaptability may feel less insecure about leaving their current job due to their perception of high levels of marketability. Johnston (2016) argues that the benefit of leveraging career adaptability resources for career development should not be limited to finding a job, but may also be related to finding jobs of good quality. This may imply that although career adaptability resources can help career prospects to be more adaptable to new working environments and finding employment, it can also help them to easily transition from one job to another. If they are not happy with their current job, or when they are presented with better career options that offer better compensation, they may be more tempted to leave their current

job because they can adjust and adapt to new work environments quickly. Klehe and colleagues (2011) suggest that career adaptability in the form of career planning positively predicted employee's loyalty to their organization, while career exploration negatively predicted employee's loyalty, and positively predicted turnover intentions. They also noted that career exploration behaviour increases when employees feel dissatisfied with their current jobs (Klehe et al., 2011). This shows that the relationship between career adaptability and turnover intention may not be linear and straightforward. It is possible that such relationships are mediated by job satisfaction. This means that although graduates leverage their career adaptability resources and ultimately achieve a positive career outcome by finding employment, if they are not satisfied with their job, they may be more tempted to leave.

### **Responding to Adaptation: The Role of Proactive Career Behaviour**

In the current study, proactive career behaviours significantly mediated the relationship between career adaptability and positive adaptation results (perceived career success, person-job fit perception). This suggests that the graduates who exhibited higher levels of career adaptability resources during their undergraduate degree are more likely to experience higher perceived career success and person-job fit, at least in part, *because* of their engagement in proactive career behaviours. Past research shows that proactive career behaviour is positively associated with higher levels of career success (De Vos et al., 2009; Smale, et al., 2018), and person-job fit (Sylva et al., 2018). The current research provides additional empirical support for career construction theory by demonstrating that proactive career behaviour mediates the relationship between career adaptability and person-job fit and perceived career success. Specifically, proactive career behaviours are anticipatory actions that one takes to change and master their career situation (Grant & Parker, 2009). Therefore, the end goal of proactive career behaviour is

to improve the fit between the person and the environment by changing oneself or manipulating the situation to achieve a different future (Parker & Collins, 2008). The notion of changing and adapting to achieve greater fit between the individual and their work roles is also implicated in career construction theory (Savickas, 1997, 2005). The current study contributes to the literature on proactivity and career construction theory by offering a process view of the antecedents and outcomes of proactive career behaviour in the context of the school-to-work transition.

It was noted by Grant and Ashford (2008) that there is a need to empirically examine the underlying process to explain proactive career behaviours and their relationship with outcomes. The current study showed that, during the school-to-work transition, having career adaptability resources can facilitate undergraduates' engagement in proactive career behaviours. By leveraging career adaptability resources, students are concerned about their career future; they are curious about the different career paths and what their future career holds; they feel confident about themselves and their abilities that they can control the situation and the outcome of their actions. In this regard, career adaptability resources function as the fuel to proactive career behaviours. Proactive career behaviours are the concrete actions they take to respond to the transition, and it is the key driving force to achieve positive adaptation outcomes. By proactively planning career paths, making connections, and developing skills needed for future careers, university students are more likely to achieve greater career success and fit within their job when they leave university and transition into the workforce. This finding aligns with the phases of proactivity proposed by Grant and Ashford (2008), including anticipation, planning, and taking action directed towards future impact. Proactive career behaviours, such as being future-oriented to make changes and improve the current situation, and proactively taking actions to make

impact in the future, are parallel to the personal agency focus that is rooted in career construction theory (Savickas, 2005; Tolentino et al., 2014).

The findings from the present study may also have implications for university career counsellors. Specifically, when designing career-adaptation interventions for university students who are transitioning to the workforce, the intervention program should incorporate activities that promote and encourage proactive career behaviours. The challenge of many existing career interventions is that they can be very expensive and time-consuming (Langher et al., 2018). The career construction theory proposes that career adaptability resources fuels adapting responses, which then produces positive adaptation results (Savickas, 1997, 2005), but career interventions usually start with encouraging specific behaviours; with the assumption that encouragement in such behaviour would result in changes in the client's career adaptability resources (Van der Horst et al., 2021). By introducing career workshops and online assessment to university students, Van der Horst and colleagues (2021) showed that interventions that involve practicing career adaptive responses can have a long-lasting effect, with students showing more adaptive responses half a year after the intervention. Career development interventions that focus on performing concrete behaviours, through role play, for instance, can strengthen career adaptability resources (Savickas, 2005).

Career interventions should also be accessible to large audiences (i.e., university students who are transitioning to the workforce). Intervention in the form of workshops that focus on promoting proactive career behaviour in students would be a great starting point. For example, the workshops should emphasize the importance of being proactive in career development through various workshop activities, such as job searching, writing resumes and cover letters, setting up career portfolios, and activities to enhance network building skills. The workshop

should also get students to think about gaining experience through CO-OP placements, developing necessary skills to succeed in the work role, but also should encourage flexibility (i.e., have a back-up plan in case things do not work out). These are all forms of adapting responses. By training proactive career exploration behaviours, students gather information about the job, at the same time, it also prompts students to ask themselves whether the job fits with their needs and their abilities. This may help students to create a more accurate and a clearer image of the job market and their vocational self-concept. Their knowledge about themselves and the occupation they are interested in can help them set up a more meaningful professional profile, and make them feel more confident in representing the profile.

Contrary to research expectations, career construction behaviours did not mediate the relationship between career adaptability and adaptation results. A possible explanation for the observed finding is that career construction behaviour and proactive career behaviour have some overlap between them. Both proactive career behaviour and career construction behaviour are adapting responses aimed at managing career tasks and transitions. For example, career exploration, career planning, and career preparation behaviours are all present or implicated within both of the measures. While both proactive career behaviour and career construction behaviour overlap in career planning, career construction behaviour focuses more on the processes leading up to planning, whereas proactive career behaviours usually start with planning (Klehe et al., 2021). Specifically, career construction behaviour emphasizes development of vocational self-concepts through pre-decisional exploration and deliberation, which then lead to career-decision making, and the post-decisional planning is to implement the decision that was made (Klehe et al., 2021). In contrast, proactive career behaviour focuses on overt actions to achieve an end goal. In this regard, proactive career planning can be seen as an

initial step that one takes to address their current career situation, whereas proactive skill development and proactive networking behaviour are arguably more “proactive” than simply planning, because it also involves putting oneself out there, and taking concrete actions to address the change. De Vos and colleagues (2009) suggest that proactive career behaviour is especially important for new graduates as it can positively affect their career success during the first years of their career. In the context of the school-to-work transition, it is possible that proactive career behaviour exerted a greater influence on the perceived career success and person-job fit than career construction behaviours, therefore masking the mediation effect of career construction behaviours on the model.

It is also worth noting that proactive career behaviour and career construction behaviour are significantly correlated at  $r = .62$ . This may imply that there is a high degree of overlap between the two constructs. Although parallel mediation analysis revealed that only proactive career behaviour significantly mediated the relationship between career adaptability and adaptation outcomes, when the mediation analysis was re-ran with career construction behaviour as the only mediator for the relationship between career adaptability and adaptation results, career construction behaviours significantly mediated the relationship between career adaptability and perceived career success  $B = .14, [0.04, 0.24]$  and person-job fit perceptions  $B = .18, [0.07, 0.32]$ . The observed finding offers some interesting perspective on the validity of the scale, as it does appear to fit with the sequence of mediation implied by the career construction model of adaptation. Savickas and colleagues (2018) noted that the student career construction inventory is still relatively new, and requires more research to further examine the validity of the scale. The current research nonetheless provided some degree of empirical support for the student career construction inventory, future research should also examine whether the

career construction inventory would mediate the relationship between career adaptability and adaptation results, and whether including additional indicators of adapting responses would change the mediating effect of career construction inventory.

### **Person-Job fit as an Indicator of a Successful Adaptation Outcome**

An important contribution of this study is that it is one of the few studies to bridge the literature on career construction theory and person-job fit, and empirically examine the concept of person-job fit as an adaptation outcome. Career construction theory aims to explain how workers integrate their vocational self-concepts with their work roles (Savickas, 1997, 2002, 2005). The career construction model of adaptation offers a sequential view of the adaptation process, with its end goal to achieve alignment between the career prospect and their work roles (Savickas, 2005).

The current study confirmed that career adaptability can positively influence person-job fit perceptions, and also indirectly through proactive career behaviours. Both career adaptability and proactive career behaviours are known to be associated with various positive organizational outcomes, such as subjective career success, (De Vos et al., 2009), work engagement (Rossier et al., 2012), and employability (McArdle et al., 2007). Moreover, person-job fit is also an important predictor of many positive organizational outcomes, such as occupational commitment, career satisfaction, and job satisfaction (Cable & DeRue, 2002). Taken together, the results of the current study support the notion that the goal of the adaptation process is to integrate the worker's self-conceptions with their work roles, and an important indicator of such successful adaptation is achieving an alignment between the worker and their work roles.

The current study was a first step toward demonstrating empirically, that a key piece of career construction theory has to do with fit. Future research could expand these ideas by looking

at whether person-job fit would work as a mediator to various career organizational outcomes. Specifically, research has consistently shown that perceived person-job fit is particularly relevant to turnover decisions (Cable & DeRue, 2002; Lauver & Kristof-Brown, 2001). It is possible that undergraduates who were able to leverage their career adaptability resources also experienced higher degrees of fit with jobs following their school-to-work transition, and because of their high degree of fit with their job, they may be less inclined to leave. Therefore, future research should investigate whether person-job fit could play a role in the relationship between career adaptability and turnover intention.

In a recent study, Kaur and Kaur (2020) demonstrated that person-job fit mediated the relationship between career adaptability and job satisfaction. It is also worth noting that this study was conducted using samples of Indian bank employees who are in their mid-career. Kristof-Brown et al. (2002) suggest that person-job fit is positively related to work satisfaction, and this relationship is moderated by the length of work experience; the strength of the relationship was stronger for those with more months of work experience than those with fewer months of experience. It is possible that undergraduates who exhibited higher levels of career adaptability resources will be more likely to experience greater person-job fit following their transition, and in turn experience higher job satisfaction. It is also possible that having CO-OP and other related work experience during undergraduate degree can be especially beneficial for recent graduates to achieve greater person-job fit perception and higher job satisfaction. Future research could expand the research on career construction theory and person-job fit by examining whether having CO-OP and other related work experience during undergraduate degree could play a role in achieving person-job fit and job satisfaction.

### **Limitations and Future Directions**

Despite the important findings presented in the current study, there are some limitations. The current study used a cross-sectional design where all measures were collected at once; conclusions of causal directions of effects, and causality cannot be derived. The current study assumed the sequence of the career construction model of adaptation starts from adaptivity, then to adaptability resources, then to adapting responses, lastly, to adaptation results. This seems to be a reasonable sequence of career development, but we cannot be sure with purely cross-sectional data. To get clearer on questions of direction of effect, future studies could take measurements at different points in time leading up to a career transition to provide better evidence of how the career development sequence unfolds over time.

Another potential limitation of this study is the use of a retrospective recall design. Despite the practicality of using retrospective self-report questionnaires, it can also induce recall bias and selective bias (Sato & Kawahara, 2011). It is possible that some students may have remembered their past adapting behaviours, or adaptability, more or less favourably than what actually happened. To overcome these drawbacks regarding cross-sectional design and retrospective recall bias, especially for a topic that is within the field of career development, future research should employ a longitudinal quasi-experimental design to detect developments or changes over time. For instance, the longitudinal study could collect data from four-wave self-reported questionnaires administered at different times. Researchers could first recruit university students who are in their final year of university, and assign students to the control group or the experimental group. Measure proactive personality and cognitive flexibility of both groups at the beginning of their semester. Then, the experimental group will receive training in proactivity and cognitive flexibility, and measure both group's proactive personality, cognitive flexibility, and

career adaptability levels at the middle of their semester. Assuming this intervention is effective and will result in a change in proactive personality and cognitive flexibility among students, this will allow the researcher to establish whether changes in proactive personality and cognitive flexibility cause a change in career adaptability resources. Then, measure proactive career behaviour and career construction behaviour at the end of their semester, prior to graduation. Lastly, follow-up with the graduates one year after graduation and survey their perceived career success, person-job fit, and turnover intentions. By implementing such longitudinal quasi-experimental design, researchers can establish the sequence of adaptation process and some degrees of causality. Although causality and direction of effects cannot be derived from the results of cross-sectional research, the current study nonetheless provides a snapshot of the relationship between psychological and behavioural processes and adaptation outcomes during the school-to-work transition.

In the current study, career adaptability resources were examined as a singular construct, instead of treating each subscale as separate dimension. This may put limits on the understanding of how each individual career adaptability resource could affect the model. Although career adaptability resources have been both examined as a single construct (e.g., Chong & Leong, 2017; Rudolph et al., 2017b; Nilforooshan, 2020), and as separate dimensions of concern, curiosity, control, and confidence (e.g., Tolentino et al., 2014; Hirschi et al., 2015), there is some evidence to suggest that certain career adaptability resources are more important than others, namely the concern and control dimension of career adaptability (Guan et al., 2013). Career concern is considered to be one of the most important dimensions of career adaptability, as it represents one's future orientation (Savickas, 2005). Although examining career adaptability resources as a single construct facilitated the interpretation of the general trends and correlations

between the constructs in the model, future research should take a more nuanced approach by examining each dimension separately and investigate its unique mechanisms and impact on the adaptation process.

In addition, it is worth noting that the current study was conducted during the COVID-19 pandemic. Many people's employment and working condition may have been affected because of this pandemic. Some are facing immediate job loss as customer demand decreases; others may face reduced working hours. For many, the COVID-19 pandemic has created a career shock that severely disrupted people's careers and lives. As a contextual factor, this could have affected the results of the current study in several ways. It is possible that people experience lower levels of career success due to the negative impact of COVID-19 on the labour market and the economy. For instance, a person may have been very proactive and adaptive with career development during their undergraduate years, but by the time they graduated, the COVID-19 pandemic happened, many businesses were forced to shut down due to the restrictions, and there were limited job openings. They may feel dissatisfied with the career path they chose, which may exert a negative influence on the relationship between proactive career behaviour and perceived career success. Furthermore, the drastic change in the way people work as a result of COVID-19 could have also influenced people's perception of person-job fit. Specifically, due to social distancing requirements, many organizations have mandated their staff members to be working from home. For example, those who prefer to work in an office were suddenly asked to be working from home, they may experience a lower level of person-job fit, because their current working condition (working from home) no longer matches their preference (working from an office). This may imply that despite having career adaptability resources can positively influence one's fit perception with their job, COVID-19 restrictions can disrupt this positive relationship

by negatively impacting one's fit perception with their job. Therefore, future research on career development and school-to-work transition should also take into account more of the contextual factors that could severely disrupt people's career and lives.

Lastly, there are also some limitations to the generalizability of the results. The current study was based on a sample of working adults in North America. The current study did not include participants that reside outside of North America; therefore, we cannot generalize the results to samples outside of working adults in North America. Future research should also examine whether the findings of the current research can be replicable in other cultural settings.

### **Conclusion**

This study investigated the applicability of the career construction model of adaptation within the context of a school to work transition. These results have theoretically and empirically advanced career construction theory, the literature on proactivity and person-job fit, and shed light on the adaptation process. The findings of this study may help educators to design a more effective curriculum to enhance student's adaptability and proactivity, and ultimately help universities to produce more career-ready candidates. Findings of this study may also help career counsellors to design effective intervention programs aimed to facilitate students' transition into the workforce.

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## Appendix A: Consent Information

## Informed Consent Form

**Title:** Constructing a Career: An Investigation of Career Construction Model of Adaptation in Recent Graduates.

**Purpose:** The aim of this study is to investigate the school-to-work career transition process in recent university graduates, and how vocational identities, career preparation behaviours influences school-to-work career transition outcomes.

**Task requirements:** The survey will take about 20 minutes to complete. To participate, you must have graduated with a bachelor's degree from a university in Canada or the U.S. within the last 5 years (2015 – present). If you meet the eligibility criteria and agree to complete the survey, you will be asked questions about your vocational identities, career preparation behaviours, as well as your perception and attitude toward your current career. You will also be asked questions about your university education, and career status after graduation.

**Attention check items:** You will be asked to respond to one or more attention check items within the survey. These items will ask you to follow an instruction (i.e., to select 'Strongly agree' for one of your responses on a particular measure). These items are included to ensure that participants are paying attention during the survey.

**Compensation:** All participants will receive compensation in USD upon entering the validation code in the window.

**Potential risks/discomfort:** There are no known risks associated with completing this survey. If you feel any discomfort or distress at any point, you may choose to skip specific questions. The information at the end of the study provides contact information for support services that you may contact if you feel any discomfort and would like to speak with someone.

**Right to withdraw:** Your participation in this survey is voluntary and you have the right to end your participation at any time for any reason. If you choose to withdraw, simply skip all of the questions until the last page. After the last question, please select "quit." Given that your survey responses are anonymous, it will not be possible for you to withdraw your answers after the survey has been submitted.

**Anonymity/Confidentiality:** Your participation in this study is strictly confidential. Your IP address will not be recorded by the researchers. The data will be removed from the Qualtrics server by September 2021 and stored on a password-protected computer at Carleton University. The anonymized data will be kept for future reference and will be used in academic publications and presentations. Your data will be stored and protected by Carleton University, but may be disclosed via a court order or data breach.

**Research personnel:** The following people are involved in this study and may be contacted anytime if you have questions or concerns:

Supervisor: Dr. Bernadette Campbell Department of Psychology, Carleton University Email: Bernadette.Campbell@Carleton.ca	Primary Investigator: Zheren Li  Department of Psychology, Carleton University  Email: Zherenli@cmail.carleton.ca
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By selecting “continue,” you consent to participate in the research study as described above.

**Appendix B: Inclusion Criteria****Inclusion Questions**

1. Have you completed a four-year undergraduate degree or equivalent?

Yes

No

2. Have you graduated from a North American university (Canada or U.S.A.) within the last five years (2018 to present)?

Yes

No

3. What is your current employment situation?

I have a part-time job

I have a full-time job

Not currently working

**Appendix C: Measures****PART 1: Main Measures****Proactive Personality Scale -Shortened version (PPS; Seibert, Crant, & Kraimer, 1999)**

Thinking back to the graduating year of your undergraduate degree, rate how strongly you how identify with the following statements about you.

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Somewhat disagree
- 4 = Nether agree nor disagree
- 5 = Somewhat agree
- 6 = Agree
- 7 = Strongly agree

1. I am constantly on the lookout for new ways to improve my life.
2. Wherever I have been, I have been a powerful force for constructive change.
3. Nothing is more exciting than seeing my ideas turn into reality.
4. If I see something I don't like, I fix it.
5. No matter what the odds, if I believe in something, I will make it happen.
6. I love being a champion for my ideas, even against others' opposition.
7. I excel at identifying opportunities.
8. I am always looking for better ways to do things.
9. If I believe in an idea, no obstacle will prevent me from making it happen.
10. I can spot a good opportunity long before others can.

Overall reliability alpha = .90 (Tolentino et al., 2014).

**Cognitive Flexibility Scale (Martin & Rubin, 1995)**

The following statements deal with your beliefs and feelings about your own behavior. Please rate how strongly you agree with the following statements.

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Somewhat disagree
- 4 = Neither agree nor disagree
- 5 = Somewhat agree
- 6 = Agree
- 7 = Strongly agree

1. I can communicate an idea in many different ways.
2. I avoid new and unusual situations.
3. I feel like I never get to make decisions.
4. I can find workable solutions to seemingly unsolvable problems.
5. I seldom have choices when deciding how to behave.
6. I am willing to work at creative solutions to problems.
7. In any given situation, I am able to act appropriately.
8. My behavior is a result of conscious decisions that I make.
9. I have many possible ways of behaving in any given situation.
10. I have difficulty using my knowledge on a given topic in real life situations.
11. I am willing to listen and consider alternatives for handling a problem.
12. I have the self-confidence necessary to try different ways of behaving.

Overall reliability  $\alpha = .77$  (Martin & Rubin, 1995).

**Career Adapt-Ability Scale (CAAS; Savickas & Porfeli, 2012)**

Different people use different strength to build their careers. No one is good at everything, each of us emphasize some strengths more than others. Mentally travel back to the graduating year of your undergraduate degree and think about the strengths and abilities you might have developed to build your future careers. With this mental image in mind, please rate how strongly you have developed each of the following abilities at that time.

- 1 = Not strong
- 2 = Somewhat strong
- 3 = Strong
- 4 = Very strong
- 5 = Strongest

**Concern**

- 1. Thought about what my future will be like
- 2. Realized that today's choices shape my future
- 3. Prepared for the future
- 4. Became aware of the educational and vocational choices that I must make
- 5. Planned how to achieve my goals
- 6. Concerned about my career

**Control**

- 7. Kept upbeat
- 8. Made decisions by myself
- 9. Took responsibility for my actions
- 10. Stuck up for my beliefs
- 11. Counted on myself
- 12. Did what's right for me

**Curiosity**

- 13. Explored my surroundings
- 14. Looked for opportunities to grow as a person
- 15. Investigated options before making a choice
- 16. Observed different ways of doing things
- 17. Probed deeply into questions I have
- 18. Became curious about new opportunities

**Confidence**

- 19. Performed tasks efficiently
- 20. Took care to do things well
- 21. Learned new skills
- 22. Worked up to my ability
- 23. Overcame obstacles
- 24. Solved problems

Overall reliability alpha = .94 (Savickas et al., 2018).

**Proactive Career Behaviour Scale (Strauss et al., 2012)**

Thinking back to the graduating year of your undergraduate degree, please rate how strongly you agree with the following statements about your behaviours.

- 1 = Disagree strongly
- 2 = Disagree a little
- 3 = Neither agree nor disagree
- 4 = Agree a little
- 5 = Agree strongly.

1. I was planning what I want to do in the next few years of my career.
2. I was thinking ahead to the next few years and planned what I need to do for my career.
3. I engaged in career path planning.
4. I have thought more about what I would like to accomplish in my work during the next year or two.
5. I have developed skills which may not be needed at that time, but in future positions
6. I have gained experience in a variety of areas to increase my knowledge and skills.
7. I have developed knowledge and skill in tasks critical to my future work life.
8. I have sought advice from my supervisor(s) or colleagues about additional training or experience I need to improve my future work prospects.
9. I have initiated talks with my supervisor about training or work assignments I need to develop skills that will help my future work chances.
10. I made my supervisor aware of my work aspirations and goals.
11. I was building a network of contacts or friendships with colleagues to obtain information about how to do my work or to determine what is expected of me.
12. I was building a network of contacts or friendships to provide me with help or advice that will further my work chances.
13. I was building a network of colleagues I can call on for support.

Overall reliability alpha = .92 (Strauss et al., 2012).

**Student Career Construction Inventory (SCCI; Savickas et al., 2018)**

Mentally travel back to the graduating year of your undergraduate experience, with this mental image in mind, please indicate how much thinking or planning you have done about each one at that time using the following scale.

- 1 = I had not yet thought much about it
- 2 = I had thought about it but do not know what to do about it
- 3 = I knew what to do about it
- 4 = I was now doing what needs to be done
- 5 = I had already done this

**Crystallizing**

- 1. Formed a clear picture of my personality
- 2. Recognized my talents and abilities
- 3. Determined what values are important to me
- 4. Knew how other people view me
- 5. Identified people that I want to be like
- 6. Found out what my interests are
- 7. Set goals for myself

**Exploring**

- 8. Interviewed people in a job that I like
- 9. Discussed my career with teachers and advisors
- 10. Learned about different types of jobs
- 11. Read about occupations
- 12. Investigated occupations that might suit me
- 13. Worked a part-time job related to my interests
- 14. Determined the training needed for jobs that interest me

**Deciding**

- 15. Decided what I really want to do for a living
- 16. Found a line of work that suits me
- 17. Selected an occupation that will satisfy me
- 18. Planned how to get into the occupation I choose
- 19. Reassured myself that I made a good occupational choice

**Preparing**

- 20. Developed special knowledge or skill that will help me get the job I want
- 21. Found opportunities to get the training and experience I need
- 22. Begun the training I need for my preferred job
- 23. Qualified for the job that I like best
- 24. Made plans for my job search
- 25. Gotten a job once I complete my education or training

Overall reliability alpha = .93 (Savickas et al., 2018).

**Perceived Career Success Measure (Greenhaus, Parasuraman, & Wormley, 1990)**

Please indicate the extent to which you agree or disagree with each of the following statements regarding your career success.

1 = Do not agree at all

2 = Disagree

3 = Neither agree nor disagree

4 = Agree

5 = Agree completely

1. I am satisfied with the success I have achieved in my career.
2. I am satisfied with the progress I have made toward meeting my overall career goals.
3. I am satisfied with the progress I have made toward meeting my goals for income.
4. I am satisfied with the progress I have made toward meeting my goals for advancement.
5. I am satisfied with the progress I have made toward meeting my goals for the development of new skills.

Overall reliability alpha = .92 (Zacher, 2014).

**6-Item Turnover Intention Scale (TIS-6; Bothma & Roodt, 2013)**

The following section aims to ascertain the extent to which you intend to stay in the organization. Please read each question and indicate your response using the scale provided for each question.

- 1 = Never
- 2 = Rarely
- 3 = Sometimes
- 4 = Often
- 5 = Always

**During the past 9 months....**

1. How often do you dream about getting another job that will be better suit your personal needs?
2. How often are you frustrated when not given the opportunity at work to achieve your personal work-related goals?
3. How often have you considered leaving your job?
4. How likely are you to accept another job at the same compensation level should it be offered to you?
5. To what extent is your current job satisfying your personal needs?
6. How often do you look forward to another day at work?

Overall reliability alpha =.88 (Bothma & Roodt, 2013).

**Needs-Supplies Fit Perceptions (Cable & DeRue, 2002)**

Please indicate how much you agree or disagree with the following statements.

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Somewhat disagree
- 4 = Neutral
- 5 = Somewhat agree
- 6 = Agree
- 7 = Strongly agree

1. There is a good fit between what my job offers me and what I am looking for in a job.
2. The attributes that I look for in a job are fulfilled very well by my present job.
3. The job that I currently hold gives me just about everything that I want from a job.

Overall reliability alpha = .93 (Cable & DeRue, 2002).

**Person-Job Fit Perception (Cable & Judge, 1996)**

Please indicate how much you agree or disagree with the following statements.

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Somewhat disagree
- 4 = Neutral
- 5 = Somewhat agree
- 6 = Agree
- 7 = Strongly agree

1. The match is very good between the demands of my job and my personal skills.
2. My abilities and training are a good fit with the requirements of my job.
3. My personal abilities and education provide a good match with the demands that my job places on me.

Overall reliability alpha = .84 (Cable & DeRue, 2002).

**PART 2: Demographic Information**

The following questions designed to provide us with some basic information about you.

What gender do you identify with? What gender do you identify with?

- Male
- Female
- Trans
- Gender-fluid
- Other

What is your age?

\_\_\_\_\_ years

What is your ethnicity? (Select a choice that applies).

- Caucasian
- Asian
- African
- African-Canadian/African-American
- Hispanic
- Middle Eastern
- Indigenous
- Biracial
- Multiracial
- Other

What was your major area of study in university? Select the option that fits best.

- Psychology
- Neuroscience
- Sociology
- Anthropology
- Child Studies
- Gender studies
- Political Science
- Law
- Criminology
- Human Rights
- Social Work
- Computer Science
- Commerce
- International Business
- Nursing

- Biological Science
- Engineering
- Mathematics
- Architecture
- Natural Science
- Geography
- Geomatics
- History
- English
- Music
- Other: \_\_\_\_\_

What undergraduate degree/certificate did you earn?

- Bachelor of Arts (BA)
- Bachelor of Commerce (BComm)
- Bachelor of Science (BSc)
- Bachelor of Engineering (BEng)
- Bachelor of Social Work (BSW)
- Bachelor of Nursing (BSN)
- Bachelor of Environmental Studies
- Bachelor of Environmental Science
- Bachelor of Computer Science
- Other: \_\_\_\_\_

Please select your current approximate grade point average (GPA) or your GPA at the time of graduation.

- A+ (90-100%)
- A (85-89%)
- A- (80-84%)
- B+ (77-79%)
- B (73-76%)
- B- (70-72%)
- C+ (67-69%)
- C (63-66%)
- C- (60-62%)
- D+ (57-59%)
- D (53-56%)
- D- (50-52%)

While completing your university degree, did you do any formal work-experience activities such as CO-OP, internships, or practicum?

- Yes
- No

What year did you graduate from university with a four-year degree or equivalent?

2020

2019

2018

Did you start a job soon after graduating from university?

Yes

No

If you did not start a job right away, about how long before you did?

Less than 3 months

Between 3 to 6 months

6 months to a year

A year or more

If you are currently working, how would you classify your current job situation?

I am working in my field

I am not currently working in my field

Whether you are working in your field or not, what 'level' would you say you are working in your organization?

Entry-level position

Mid-level position

Senior-level position

## **Appendix D: Debriefing Information**

### **Debriefing for the Study**

Career in Construction: An Investigation of the Model of Adaptation in Recent Graduates.

Thank you for your time! Please read this information to find out more about the study. Please take note of the URL for this webpage so that you can revisit it at a later time if you have questions or concerns.

### **What are we trying to learn in this research?**

Contemporary job landscape has become increasingly competitive, uncertain, and ever-changing. Navigating and finding a suitable career in the uncertain career context can be difficult for recent university graduates, who are facing the reality of an increasingly competitive job market, financial burdens, and unpredictable career paths. To overcome the challenges, young adults need be adaptive to the changing demands of contemporary work environments. Using a retrospective recall design, this research investigated the role of adaptive attitudes, competencies, and behaviours on the school-to-work career transition outcomes of recent university graduates. We asked you to tell us about your willingness and readiness to adapt to the changing environment, and the behaviours you engaged in achieving your career goals. We also asked you to tell us about your views on your current position, in terms of satisfaction, perception of fit, intentions to leave, and the pro-social behaviours you performed during work.

### **Why is this important to scientists or the general public?**

As the world of work is rapidly changing, career paths have become increasingly uncertain and complex, especially for soon-to-be graduates. As a result, recent graduates need to play an active role in constructing and developing their careers, through engaging in career development behaviours and acquisition of skills needed for employment, and being able to adapt to the changing work environment.

This research will help us better understand the role of being adaptive in the school-to-work transition process, examine the underlying mechanisms in the adaptation model, and test the assumptions in the career construction theory. Findings of this research will likely contribute to a more comprehensive understanding of the career construction theory and the school-to-work career transition process. We hope findings of this research will also provide young adults with a good understanding of the school-to-work transition and career development process, and inform them with ways to improve and develop themselves for better future career outcomes.

### **Is there anything I can do if I found filling out this survey to be emotionally upsetting?**

Yes. If you feel any distress or anxiety after participating in this study, please feel free to contact a local crisis/distress centre or call a distress helpline:

Canada: 866-531-2600

U.S.A.: 800-273-8255

**What if I have questions later?**

If you have any remaining concerns, questions, or comments about this study, please feel free to contact Dr. Bernadette Campbell at the Department of Psychology, Carleton University, Bernadette.Campbell@carleton.ca, phone: 613-520-2600, ext. 4080 or primary investigator Zheren Li, zherenli@cmail.carleton.ca

Should you have any ethical concerns about this study please contact the Chair of the Carleton University Research Ethics Board-B (by phone: 613-520-2600 ext. 4085 or by email: ethics@carleton.ca).

This study has received clearance by the Carleton University Research Ethics Board – B (Clearance #106070).