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Career exploration: A review and future research agenda

Zhou Jiang*, Alexander Newman, Huong Le, Alfred Presbitero, Connie Zheng

Department of Management, Faculty of Business and Law, Deakin University, Australia

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ABSTRACT

To move forward in their career journeys, individuals engage in career exploration by reflecting upon both personal (i.e., internal) and contextual (i.e., external) factors. The extent to which this exploration is effectively processed drives individuals' attitudes, behaviors, and other career- and work-related outcomes. Over the last two decades, a growing body of empirical research has been undertaken in relation to career exploration.

However, debate continues as to how career exploration should be conceptualized and measured, which factors influence its development, and how and when it affects individuals' career and work outcomes. The present study undertakes a review of the career exploration literature to identify research gaps and assist in the development of an agenda for future work. In particular, the review reveals the need to integrate a dynamic life-span perspective to enhance our understanding of career exploration and the need for future research to identify the key mechanisms that explain the effects of career exploration and the contingencies of any such effects. Additionally, future research should investigate individuals' real-time experiences, adopt longitudinal and experimental designs, broaden the current narrow focus of studies on students to include employees, examine multilevel phenomena, and examine the effects of institutional and economic contexts on individuals' career exploration.

Career exploration is a central construct embedded in most career development theories and models (e.g., [Flum & Blustein, 2000](#); [Lent & Brown, 2013](#); [Lent, Brown, & Hackett, 1994](#); [Stumpf, Colarelli, & Hartman, 1983](#); [Super, 1980](#)). It refers to "purposive behavior and cognitions that afford access to information about occupations, jobs, organizations that was not previously in the stimulus field" ([Stumpf et al., 1983, p. 192](#)). More concisely, [Zikic and Klehe \(2006\)](#) defined career exploration as "the gathering of information relevant to the progress of one's career" (p. 393). Career exploration facilitates the establishment of coherent career plans, the pursuit of a personally meaningful work life, the management of rapid changes, and assists individuals to deal with diverse transitions in life ([Blustein, 1997](#); [Savickas, 1997](#); [Zikic & Hall, 2009](#); [Zikic & Klehe, 2006](#)). Career exploration has been traditionally viewed as a stage in the career development process ([Super, 1957](#)). However, vocational psychologists have also contended that it has lifelong and adaptive functions ([Flum & Blustein, 2000](#); [Super, 1980](#)). An involvement in the conceptualization of career exploration is essential, given that protean or boundaryless vocational contexts increasingly require individuals to undertake career exploration not only at the beginning of their careers, but continuously and throughout all stages of their careers ([Herr, 2005](#); [Zikic & Hall, 2009](#)). These changing contexts have led to career exploration being viewed as a key dimension of career adaptability ([Hirschi, 2009](#)), which, in the past decade, has been recognized as an important prerequisite for success in vocational endeavors ([Maggiori, Rossier, & Savickas, 2017](#); [Savickas, 2013](#)).

Researchers have stressed the need for career exploration scholarship to keep pace with the rapidly changing nature of work. [Flum](#)

* Corresponding author at: Department of Management, Deakin Business School, Deakin University, Locked Bag 20000, Geelong, VIC 3220, Australia.

E-mail addresses: z.jiang@deakin.edu.au, dr.zhou.jiang@gmail.com (Z. Jiang).

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and [Blustein \(2000\)](#) described career exploration as a process that integrates the ego-identity and self-determination perspectives

into career development, and noted that career development is driven by internalizing extrinsic motivations and embedding intrinsic motivations across life span and domains. They also emphasized that the integration of these two perspectives expands the scope of career exploration beyond a specific vocational development stage to a process of synthesis and information seeking that individuals undertake in relation to the self and the environment throughout the entirety of their careers and life journeys. Extending their original social cognitive career theory (SCCT; Lent et al., 1994) by focusing on the wide range of career adaptation phenomena over a life span, Lent and Brown (2013) introduced the SCCT model of career self-management (CSM), which incorporates the life-span approach and highlights the role of self-management in the career exploration process. In accordance with recent burgeoning research on career adaptability (see Rudolph, Lavigne, & Zacher, 2017), the CSM model places career exploration at its core. Under this model, career exploration is viewed as an adaptive mechanism of personal agency that allows individuals to build their career adaptability and manage adaptations and renewals in their vocational development (Hirschi, 2009; Savickas, 2002, 2013). This stream of work has broadened our theoretical understanding of the role of career exploration in individuals' life spans.

The amount of empirical research being conducted on the antecedents and outcomes of career exploration has continued to grow. However, no comprehensive review of the empirical work on career exploration has been conducted since the turn of the millennium. Previous reviews have either only consider the research conducted before the new millennium (e.g., Blustein, 1997; Flum & Blustein, 2000), or only provide selective summaries of the empirical work that has been undertaken in relation to career exploration (e.g., only contextual barriers were covered for antecedents, Zikic & Hall, 2009). Thus, a comprehensive review of empirical work on career exploration in the last two decades is critical to consolidate our understanding of the nomological network of variables to which career exploration is related. This review seeks to summarize how career exploration has been conceptualized and measured by previous research, present an overview of the empirical evidence on the antecedents and outcomes across different life stages, and propose an agenda for future research.

Consistent with best practice (Short, 2009), databases were searched (i.e., the Web of Science, PsychInfo, and Google Scholar) to identify any relevant peer-reviewed journal articles published from January 2000 to January 2018. The term "career exploration" has been used interchangeably with the terms "vocational exploration" (Flum & Blustein, 2000) and, on occasion, "occupational exploration" (Noack, Kracke, Gniewosz, & Dietrich, 2010). Consequently, the databases were searched for any articles written in English that included any of these three terms in their titles, abstracts or keywords. To ensure the review was as comprehensive as possible, major journals that have published extensively on career-related issues (i.e., the Journal of Vocational Behavior, the Journal of Career Assessment, the Journal of Career Development, Career Development International, Career Development Quarterly, the Journal of Employment Counseling, the Journal of Counseling Psychology, the Counseling Psychologist, the Journal of Vocational Education and Training, the Canadian Journal of Career Development, the Australian Journal of Career Development, the International Journal of Educational and Vocational Guidance and the British Journal of Guidance and Counselling) were also manually screened to identify any papers that were not found in the database search.

Ultimately, the 194 articles identified in these searches were reviewed by two authors independently. Only articles that were published in a peer-reviewed journal and that measured career exploration quantitatively were included in the literature review. Conceptual and qualitative articles were excluded given our focus on examining the nomological network of variables to which career exploration is quantitatively/empirically related. Working papers, conference papers, book chapters, unpublished manuscripts and dissertations were also excluded from the review, as the quality of such research could not be verified (e.g., whether the document had been fully peer reviewed). As a result, we excluded 112 articles. Two authors then analyzed the content of the remaining 82 articles to identify those in which career exploration had been quantitatively tested in relation to at least one other variable. This resulted in a final set of 67 articles being selected for inclusion in the review.

This paper begins by delineating the conceptual foundations of career exploration that have been developed over the past 50 years. The remainder of this paper is divided into two main sections. In the first section, a review of empirical quantitative research (published from 2000 onwards) is undertaken on the antecedents and outcomes of career exploration across different life stages and the factors that mediate or moderate its relationship with such antecedents and outcomes. The second section (the research agenda) outlines opportunities for theoretical and empirical advancements in the field of career exploration.

1. Conceptual foundations of career exploration

1.1. Defining career exploration

In the broad psychological literature, exploration is defined as "the process of eliciting and sustaining one's interest in an environment, thereby encouraging exploration and the acquisition of valuable new knowledge" (Herzog & Larwin, 1988, p. 598). The exploratory behavior in this process involves individuals actively considering opportunities for the development and constitution of their self-identity as they navigate their associated environments (Abu-Rayya, 2006). By engaging in exploratory processes or behaviors, individuals actively question, experiment with, and weigh various identities before making a decision about the values, beliefs, and goals that they will pursue (Crocetti, Sica, Schwartz, Serafini, & Meeus, 2013). The literature suggests that exploration is a general construct that usually needs to be contextualized to fit a specific domain of interest. As stated above, in the field of careers, Stumpf et al. (1983) described career exploration as a process characterized by exploratory behaviors and cognitions that relate to vocational development. This process involves four aspects: "(1) where one explores, (2) how one explores, (3) how much one explores, and (4) what one explores (i.e., the focus of exploration)" (Stumpf et al., 1983, p. 192). Under this model, individuals seek information from different sources of which the major ones are the self and the environment. They intentionally and systematically,

or fortuitously and randomly, explore the environment and the self. However, the frequency of the exploration and the amount of information obtained by individuals may vary. During the exploration process, individuals consider different occupational fields and may place varying degrees of focus on their career objectives.

The conceptual attributes described by Stumpf et al. (1983) were adopted by Flum and Blustein (2000), who used the identity information and self-determination/motivational perspectives to interpret the process of career exploration and argued that "exploration provides cognitive and affective building blocks for self-construction, in effect furnishing individuals with the capacity to construct themselves in the face of increasingly daunting work-based challenges" (Flum & Blustein, 2000, p. 382). Specifically, they contended that career exploration serves as part of the self-construction process and that self-construction can further motivate meaningful exploration. According to the identity-information perspective, individuals with conferred identity, who are extrinsically motivated and triggered (e.g., by significant others) to internalize the self-relevant and interest-relevant information they obtain from external sources, undertake exploration that promotes interactions between the individual and the environment and that play an instrumental role in internalization. In contrast, individuals with self-constructed identity are information-oriented and intrinsically motivated and thus naturally seek information and self-initiate exploration. According to this conceptualization, career exploration is "a critical means by which individuals can construct themselves and re-explore and reconstruct themselves throughout the life span and across life roles" (Flum & Blustein, 2000, p. 382). By analyzing its inherent bases from the identity and motivation perspectives, Flum and Blustein contended that the career exploration process encompasses the exploration and evaluation of a broad set of internal attributes and external opportunities and constraints in relation to various career-relevant contexts.

Stumpf et al.'s (1983) definition of career exploration specifically highlighted different elements of the exploration process and has been widely adopted. Indeed, researchers have continued to draw on Stumpf et al.'s framework for many years and consequently have largely focused on the sources of career exploration (i.e., the self and the environment) and the amount of exploration that different individuals undertake (e.g., Cheung & Jin, 2016; Fan, Cheung, Leong, & Cheung, 2012; Lent, Ireland, Penn, Morris, & Sappington, 2017; Nauta, 2007; Zikic & Klehe, 2006). This body of research has consistently shown that personal characteristics (e.g., their personality and other individual differences) and the external environment (e.g., social support and work contexts) motivate vocationally relevant self and environmental career exploration, and subsequently influence career and work outcomes.

1.2. The life-span perspective of career exploration

Traditionally, theorists view career exploration as a critical stage in an individual's career development journey and one that is largely undertaken during adolescence and early adulthood (Ginzberg, Ginsburg, Axelrad, & Herma, 1951; Jordaan, 1963; Super, 1957; Tiedeman & O'Hara, 1963). Harren (1979) emphasized that exploration is part of the career planning process and argued that during the exploratory phase, individuals initiate thoughts and behaviors that will affect their future career choices. To capture how changes in social contexts affect careers, Super (1980) incorporated elements of life span and life space into the conceptualization of the career development process and emphasized the phenomenon of "recycling" in this process. Based on the life-career rainbow model, Super argued that an individual's role at a specific stage and in a particular setting is nested in an integrative framework of diverse life roles that mutually affect one another. As emphasized in this model, an individual's career development is nonlinear, dynamic, and flexible in that each individual will face a complex array of career experiences across domains of life. This life-span conceptualization highlights an individual's need to re-explore and reconstruct his/her career role during life transitions (Flum & Blustein, 2000) and continuously explore and construct his/her current role to gain a better developmental experience. Super's view of career development led to a broadened connotation of career exploration in subsequent work, and an acknowledgement that career exploration is a lifelong, ongoing process that is frequently triggered by life transitions (Blustein, 1997; Flum & Blustein, 2000; Gross Spector & Cinamon, 2018).

Scholars have argued that initial vocational exploration activities are trialed in early adulthood to reach a career decision point and subsequently to reach a fit, find a niche (Hall, 1986; Levinson, 1986) and establish career routines (Zikic & Hall, 2009). These routines may change or be interrupted voluntarily or involuntarily at different stages, irrespective of the extent to which individuals settle into such a career routine, and as a result, may lead to another cycle of exploration (Hall, 1986; Zikic & Hall, 2009). The continuity embedded in the lifelong perspective has led some scholars to consider career exploration as a means of coping with career/life roles and transitions, and as an adaptive mechanism that facilitates the management of continuous and rapid environmental changes (Blustein, 1997; Zikic & Klehe, 2006). In other words, researchers have begun to accept that career exploration is an ongoing process undertaken across an individual's life span. The life-span, life-space theory of career development (Super, Savickas, & Super, 1996), along with its derivations (e.g., Lent & Brown, 2013), indicates that individuals' careers progress developmentally as they move forward in their primary life roles. In line with the developmental and constructionist perspectives (Savickas, 2002; Super et al., 1996), individuals' career exploration, a feature of their broader career development processes, emerge in the early stages of life (e.g., childhood), increase during adolescence and early adulthood, and continue across the rest of the life span. This view suggests that a developmental perspective will be of use to integrate the scholarship of career exploration into the life-span, life-space framework of career development- a framework that has long been emphasized in the literature (e.g., Flum & Blustein, 2000).

To test these conceptual foundations, empirical researchers have adopted diverse measures of career exploration to assess the types of exploratory behaviors individuals engage in and individuals' levels of engagement in such behaviors in relation to career development. In the following section, consideration is given to how recent studies have empirically measured career exploration.

1.3.1. Career exploration survey

Following the introduction of an integrative model of career exploration, [Stumpf et al. \(1983\)](#) developed the 59-item Career Exploration Survey (CES) to capture three major categories of exploration (i.e., the exploration process, reactions to exploration and beliefs about exploration). Each category is represented by a set of dimensions (of which there are 16 in total). The final set originated from items that had been sourced from the literature and two stages of interviews with 24 individuals over a 6-month job-search period. These items were specifically generated to fit the predetermined categories. Preliminary exploratory factor analyses supported the anticipated multidimensional structure of the CES. Additionally, the internal consistency of each CES dimension was found to be acceptable when tested on a student group (most dimensions demonstrated a Cronbach's alpha of over 0.80). Test-retest reliability was also established on a sample of 55 career changers over a four-week period ([Stumpf et al., 1983](#)).

Since its inception, the CES has become the dominant measure of career exploration. Indeed, since 2000, 31 empirical studies utilized the full version of the CES (e.g., [Owens, Motl, & Krieshok, 2016](#)), adapted/extended measures (e.g., [Gamboa, Paixão, & de Jesus, 2013](#); [Rowold, 2007](#); [Rowold & Staufenbiel, 2010](#)) or sub-dimensions of the CES (e.g., [Bartley & Robitschek, 2000](#); [Downing & Nauta, 2010](#); [Dozier, Sampson Jr, Lenz, Peterson, & Reardon, 2015](#); [Hardin, Varghese, Tran, & Carlson, 2006](#); [Lent et al., 2017](#); [Nauta, 2007](#); [Praskova, Creed, & Hood, 2015](#)). Of these studies, a majority ($n = 25$) focused on the sub-dimensions of self-exploration (5 items) and environmental exploration (6 items) using either the full subscales (e.g., [Cheung & Arnold, 2010, 2014](#); [Germeijs & Verschuere, 2006](#); [Hardin et al., 2006](#); [Lent, Ezeofor, Morrison, Penn, & Ireland, 2016](#)) or modified versions (e.g., [Koen, Klehe, Vianen, Zikic, & Nauta, 2010](#); [Werbel, 2000](#); [Zikic & Klehe, 2006](#)). The cited reasons for adapting the CES or its sub-dimensions include deleting and rewording items to fit participants at particular career stages (e.g., unemployed but already with a chosen career field; [Zikic & Klehe, 2006](#)) or excluding items to improve the scale validity in confirmatory factor analysis (CFA; [Werbel, 2000](#)). Researchers ([Gamboa et al., 2013](#); [Rowold, 2007](#)) have also made adjustments (e.g., the addition or deletion of items) to the CES to fit specific cultural contexts. The CES has been translated into Chinese (e.g., [Cai et al., 2015](#); [Cheung & Arnold, 2014](#); [Xu, Hou, & Tracey, 2014](#)), German (e.g., [Rowold & Staufenbiel, 2010](#)), Dutch (e.g., [Klehe, Zikic, Van Vianen, & De Pater, 2011](#)), Indonesian ([Sawitri & Dewi, 2015](#)), French (e.g., [Germeijs & Verschuere, 2006](#)) and Portuguese (e.g., [Gamboa et al., 2013](#)). Despite its comprehensiveness and popularity, the CES is lengthy, making it difficult to employ in empirical work. This has led to a growing tendency among researchers to focus selectively on one or a limited number of dimensions of CES. However, empirical work that focuses on one or a small number of dimensions does not provide a holistic understanding of career exploration. Therefore, researchers, as highlighted below, have begun to use or develop shorter alternative measures of career exploration.

1.3.2. Career development inventory

A subscale of the Career Development Inventory (CDI) ([Thompson, Lindeman, Super, Jordaan, & Myers, 1981](#)) has also been adapted to measure career exploration. This self-reporting CDI subscale comprises 20 items of which the first 10 relate to the sources of career information and the latter 10 relate to the evaluation of the usefulness of this information ([Thompson et al., 1981](#)). Based on the CDI subscale, [Lokan \(1984\)](#) developed a shortened scale that comprises 16 items that capture career exploration. This scale has been used in seven empirical studies, mainly in Australia ([Patton, Bartrum, & Creed, 2004](#); [Rogers, Creed, & Praskova, 2018](#)). A further five studies (e.g., [Chiesa, Massei, & Guglielmi, 2016](#); [Hirschi, 2011](#); [Hirschi & Läge, 2007](#)) were identified as having used a 20-item German version of the career exploration subscale from the CDI ([Seifert & Eder, 1985](#)). Further, a selective number of items from the subscale have been used to capture career exploration in the Italian ([Chiesa et al., 2016](#)) and UAE ([Forstenlechner, Selim, Baruch, & Madi, 2014](#)) contexts. Compared to [Stumpf et al.'s \(1983\)](#) CES, the CDI places the emphasis on individuals' exploration of or reflection on the help that they can get from external sources in the career exploration process (e.g., other people or external information). Another concern relates to the fact that this subscale of the CDI lacks content validity, given that most items relate to how informational sources are offered or beliefs towards jobs or careers, and therefore does not explicitly assess the extent of an individual's active engagement in career exploration. Given these limitations researchers should be cautious when using the career exploration subscale of CDI in future work.

1.3.3. Self-developed measures

In addition to the two aforementioned popular measures of career exploration, researchers have developed a number of other measures to assess career exploration, including 6-item scales ([Kracke, 1997, 2002](#); [Rojewski, Lee, & Hill, 2014](#); [Yuen, Gysbers, Chan, Lau, & Shea, 2010](#)), 13-item scales ([Tracey, Lent, Brown, Soresi, & Nota, 2006](#)), 14-item scales ([Littman-Ovadia, 2008](#)) and 24-item scales ([Vignoli, Croity-Belz, Chapeland, de Fillippis, & Garcia, 2005](#)). Most of these scales share commonalities with the CES sub dimensions of self- and environmental exploration, as they are specifically related to the behaviors in the process of career exploration but pay little attention to attitudes and beliefs. Thus, these scales appear to be purely behavior-focused. However, unlike the CES and CDI, these newly developed measures have not been widely adopted. Indeed, only a few of these measures (e.g., [Kracke, 1997](#); [Tracey et al., 2006](#); [Yuen et al., 2010](#)) have been used outside their studies in which they were originally developed. A notable exception is [Tracey et al.'s \(2006\)](#) 13-item scale that has recently been adopted in both full ([Duchesne, Mercier, & Ratelle, 2012](#)) and modified versions ([Ferrari et al., 2015](#)). This scale, which exhibits strong construct validity, was originally developed to measure the frequency at which individuals' engage in specific career exploration behaviors (e.g., talk to friends about jobs or careers; read a book regarding how to choose careers; and search the internet to obtain job or career related information). Due to its

extensive emphasis on behaviors, Tracey et al.'s scale does not measure cognitions that predecessors (Flum & Blustein, 2000; Stumpf et al., 1983) have conceptualized as being an important component of career exploration. However, given it does highlight critical exploratory

behaviors, researchers should consider adopting this scale when focusing on behavioral aspects of the career exploration process.

Using the various measures highlighted, researchers have empirically examined the antecedents, outcomes, mediators and moderators of career exploration. To extend understanding of how career exploration changes across life stages, this review of the empirical evidence on career exploration was structured in relation to developmental periods to highlight the variables/constructs that have been found to be associated with career exploration in these periods. The review section that follows considers career exploration and the related empirical evidence in relation to childhood, adolescence, early adulthood and established (or post-early) adulthood stages. Overall, these stages are consistent with an individual's life and career development journey. In line with previous research (Livingston et al., 2015; Romero, Edwards, Fryberg, & Orduña, 2014; Zucker, Owen, Bradley, & Ameeriar, 2002), a child is defined as anyone below or at 13 years of age; an adolescent as anyone over 13 but below 18 years of age; an early/young adult as an individual between 18 and 25 years of age; and a post-early adult (or an established adult) as an individual over 25 years of age.

2. A review of the empirical research on career exploration

2.1. Career exploration during childhood

The vocational development literature has generally assumed that individuals start exploring careers in early childhood (Hartung, Porfeli, & Vondracek, 2005, 2008). However, only a limited number of empirical studies ($n = 2$) have sought to investigate career exploration during childhood. Research published since 2000 has revealed no age-related or gender-related differences in the career exploration of students aged between 9 and 13 years (Ferrari et al., 2015). Furthermore, research has shown that levels of career exploration remain similar as school children age (Noack et al., 2010). Despite this stability, career exploration has been found to positively predict children's perceived or actual knowledge related to occupations of an investigative, realistic, artistic and enterprising nature (Ferrari et al., 2015). There is a dearth of knowledge as to how and when children engage in career exploration. The lack of empirical research on career exploration in childhood is understandable (Hartung et al., 2005), as children may be incapable of exploring the environment and the self in relation to a career/work setting. However, given that some work suggests that children's interests and aptitudes may guide them to learn about the world-of-work (Bryant, Zvonkovic, & Reynolds, 2006; Hartung et al., 2005), more research needs to be conducted on the factors driving career exploration during childhood and how career exploration affects children's career-related behaviors.

2.2. Career exploration during adolescence

There is a general assumption among researchers of vocational psychology that individuals engage more in career exploration as they progress towards or enter adolescence. In support of this assumption, Noack et al. (2010) found that adolescents (i.e., 10th-grade students) engage in more occupational exploration than children (i.e., 6th-grade students). The greater level of career exploration undertaken in adolescence compared with that undertaken in childhood is reflected by the fact that a larger proportion of studies ($n = 28$) have sampled adolescents. These studies have typically examined the antecedents of career exploration. Only a limited number of studies have examined the effects of career exploration on attitudinal and behavioral outcomes.

2.2.1. Individual antecedents of adolescents' career exploration

Empirical studies have shown that a number of individual differences can foster or inhibit adolescents' career exploration. Individual beliefs have been shown to affect career exploration. For example, there is growing evidence of a positive relationship between career decision self-efficacy (i.e., the belief that one has the capability to complete career decision tasks) and career exploration among high school students (Chiesa et al., 2016; Creed, Patton, & Prideaux, 2007; Rogers & Creed, 2011). Hirschi, Abessolo, and Froidevaux (2015) established that hope (i.e., a positive belief about the future) elicits higher levels of career exploration among adolescents aged 15–18 years. Similarly, Porfeli, Lee, and Weigold's (2012) found that high school students who hold more positive views about their future work and careers engage in more career exploration. Additionally, researchers have shown that both in depth and in-breadth career exploration by high school students can be triggered by personal agency beliefs that include a combination of positive beliefs in relation to their own capacity and that towards their associated contexts (e.g., Lee, Porfeli, & Hirschi, 2016). Although this growing stream of research demonstrates that positive personal beliefs promote career exploration in adolescence, in the absence of empirical evidence we are unable to conclude whether negative personal beliefs prevent adolescents from engaging in career exploration.

Interests and internal motivations have also been shown to affect adolescents' career exploration. Tracey et al. (2006) considered various types of career interests (i.e., realistic, investigative, artistic, social, enterprising and conventional [RIASEC] interests) and found that higher levels of RIASEC interests positively predict higher levels of career exploration among middle and high school students. It should be noted that these career interests share some commonalities with individuals' personality dispositions. Indeed, within the literature, the RIASEC framework is viewed as a model of vocational personality (e.g., Spokane & Cruza-Guet, 2004). However, previous research on adolescents appears to have neglected the effects of other personality traits or dispositions, except in relation to the general trait of anxiety, which has been shown to prevent high school students from exploring

their vocational self and environment (Vignoli et al., 2005). Some research has examined how adolescence motivations influence career exploration. For example, Duchesne et al. (2012) found that in middle school, adolescents with higher intrinsic motivation reported higher levels of engagement in career exploration activities (e.g., reading job/career information and thinking about their own career interests). If developed early in life, work valence (i.e., an individual's affective and cognitive appraisals of anticipated work outcomes) has also

been found to predict adolescents' career exploration. For example, Lee et al. (2016) reported that stronger positive work valences foster high school students' career exploration.

Research on the influence of personal beliefs and motivations on adolescents' career exploration has increased. However, only limited consideration has been given to the role of individuals' psychological states in fostering career exploration. Controlling for general trait anxiety, Vignoli (2015) found that high levels of social anxiety resulting from fear of failure in one's academic or occupational life were negatively related to career exploration among adolescents. Similarly, Creed et al. (2007) found that adolescents who were concerned with their ability to make vocational decisions were less likely to explore different kinds of careers. The predominant focus of researchers in studying demotivating (rather than motivating) psychological states among adolescents might result from the fact that adolescents are at a stage in which they typically worry about career futures and are demotivated by vocational difficulties (Vignoli et al., 2005). The lack of focus on motivating career states, although not surprising, requires future attention.

Research has also shown that demographic differences predict adolescents' career exploration. For example, empirical research among high school students suggests that older adolescents tend to engage more in career exploration activities than their younger counterparts (Rowold & Staufenbiel, 2010). The length of paid work experience outside of school has also been found to be positively related to adolescents' career exploration behaviors (Creed et al., 2007).

2.2.2. Contextual antecedents of adolescents' career exploration

In line with theoretical assertions, there is growing empirical evidence that contextual support (i.e., social/interpersonal and instrumental support) acts as a key facilitator of adolescents' career exploration. For example, social support from family, peers, friends and educators has been found to promote career exploration among middle and high school students (Kracke, 2002; Turan, Çelik, & Turan, 2014). Researchers have also characterized accepting and open school climates as a form of social support, and found that such climates positively predict occupational exploration among pre-tertiary students (Noack et al., 2010). Outside of the school setting, Gamboa et al. (2013) reported a positive link between the social support provided by supervisors and career self-exploration undertaken by high school students participating in a vocational education placement program. This study also established that instrumental support, reflected partly by the quality of the training experience (e.g., peer feedback and learning opportunities), encouraged adolescents to engage in career exploration. Such findings suggest that contextual support is important in predicting career exploration among adolescents. However, more work needs to be undertaken to identify which types of support are more influential in fostering career exploration and to what extent this depends on the individuals involved.

2.2.3. Outcomes of adolescents' career exploration

In contrast to burgeoning work on the antecedents of adolescents' career exploration, empirical research has only recently begun to investigate the outcomes of adolescents' career exploration. Notably, Duchesne et al. (2012) found that high school students who engaged in more career exploration tended to be more oriented towards achievement goals. Additionally, Rogers et al. (2018) showed that while the self-reported vocational identity of high school students was not influenced by career exploration, their parents' perceptions of their vocational identity did influence their career exploration. The non-significant relationship between career exploration and vocational identity may be explained by the potential existence of mediators. However, it is presently unclear what causes the incongruence between adolescents' and parents' perceptions of vocational identity. In light of these findings, more research needs to be undertaken to understand the attitudinal and behavioral outcomes of career exploration among adolescents.

2.3. Career exploration during early adulthood

There is extensive evidence to suggest that individuals continue to engage in career exploration as they progress into early adulthood (Lent & Brown, 2013). Many individuals at this life stage face school-to-work transitions. Consequently, approximately half of the empirical literature published since 2000 ($n = 34$) has focused on the career exploration of young adults, particularly among university students aged between 18 and 25 years. Compared to adolescents, these young adults engage more career exploration in relation to themselves and their environments (Xu, Hou, Tracey, & Zhang, 2016). However, this trend tends to occur in relation to in-depth exploration as opposed to in-breath exploration (Porfeli, Lee, Vondracek, & Weigold, 2011). The literature has examined various antecedents, outcomes and moderators of young adults' career exploration. Similar to the studies undertaken in relation to adolescents, previous research on the antecedents of career exploration of the self and the environment among young adults has concentrated on individual and contextual antecedents.

2.3.1. Individual antecedents of young adults' career exploration

Personality traits have been shown to exert a significant influence on young adults' career exploration. For example, Li et al. (2015) found that higher levels of openness to experience, agreeableness and conscientiousness were positively related to greater career exploration. Similar results were found when examining the various dimensions of career exploration. For example, research

has shown that openness to experience promotes self-exploration and that conscientiousness benefits environmental exploration (e.g., seeking career information; [Reed, Bruch, & Haase, 2004](#)). In contrast, neuroticism has also been found to prevent individuals from engaging in career information seeking behaviors ([Reed et al., 2004](#)). Mixed results have been reported in relation to extraversion. Specifically, high extraversion has been found to enhance environmental exploration ([Reed et al., 2004](#)), but has been found to hinder self-exploration ([Nauta, 2007](#)). While additional work to verify the findings of cross-sectional studies is still warranted, these findings suggest that extraverted adolescents' reliance on external resources in the process of career exploration prevents them from engaging

in self-exploration. In addition to this line of research, which is rooted in the Big Five personality framework, a recent study of university students by [Fan et al. \(2012\)](#) confirmed that social potency was a universal personality factor that promotes both career self- and environmental exploration. The effects of social potency lead individuals to pursue their vocational interests (e.g., their artistic and entrepreneurial interests) which in turn direct the career exploration processes ([Nauta, 2007](#)).

Personal beliefs continue to be important drivers of career exploration as adolescents progress towards early adulthood. It has been found that hope ([Hirschi et al., 2015](#)) and holding positive views about one's future career ([Porfeli et al., 2012](#)) and one's future work self ([Guan et al., 2017](#)) trigger career exploration among university students. [Cai et al. \(2015\)](#) also identified a positive link between self-esteem (i.e., a belief about one's self-worth) and career exploration. They argued that a positive evaluation or orientation towards oneself as a person can prompt an individual to set challenging career goals and explore ways to achieve these goals. This view is consistent with the findings that career decision self-efficacy or confidence ([Bartley & Robitschek, 2000](#); [Chan, 2018](#)) and career self-evaluation ([Neureiter & Traut-Mattausch, 2017](#)) tend to encourage college students to engage in career exploration activities. Career exploration has also been reported to originate from adolescents' positive cultural beliefs and orientations. For example, [Guan et al. \(2018\)](#) showed that acculturation orientation boosted career self-exploration and environmental exploration among Chinese students studying overseas. This stream of research clearly demonstrates that positive attitudes or beliefs towards the self, regardless of the type of the belief, are likely to activate adolescents' engagement in career exploration.

In addition to personal beliefs, motivation has been shown to influence young adults' career exploration. For example, [Nauta \(2007\)](#) found that individuals who were high in realistic, artistic or conventional career interests engaged more frequently in self exploration of career than individuals high in investigative or enterprising career interests who, somewhat surprisingly, were more reluctant to do so. To date, the cause of these differences is unknown. However, it is clear that different types of career interests can act as motivators or barriers to early adults' engagement in career self-exploration (e.g., self-assessment and retrospection of career issues) ([Nauta, 2007](#)). In addition to interest-based motivators, needs-driven motivators such as individuals' needs for personal growth and autonomy ([Bartley & Robitschek, 2000](#)) and social-oriented achievements (i.e., an intrinsic motivation to attain goals set by significant other; [Cheung & Arnold, 2010](#)) have been found to foster young adults' career exploration. However, other motivators such as impersonal motivation (i.e., a tendency to view favorable outcomes as unachievable and show little intentionality) and have been found to hamper career exploration ([Bartley & Robitschek, 2000](#)). This is not surprising, because impersonally and irrationally motivated adolescents, due to their (perceived) lack of control over contexts ([Hodgins, 2008](#)), might be less efficient in exploring, identifying or utilizing accurate information sources in career development. Beyond individuals' internal beliefs and motivations, only limited research has been conducted on the effects of psychological states/perceptions and demographics on young adults' career exploration. Previous research examined whether individuals' perceptions of their relationship with the environment influence their career exploration. For example, empirical research has shown that university students' perceptions of their academic fit and a perceived congruence between their own and their parents' career expectations lead to greater engagement in career exploration activities ([Sawitri & Dewi, 2015](#)). Not unexpectedly, negative psychological states have been shown to be a barrier to career exploration. For instance, anxiety about the social environment has been found to reduce career exploration, particularly among young men with a lower level of independent self-construal ([Hardin et al., 2006](#)). Similarly, an anxious state where exploratory stress is experienced, has been reported to prevent young adults from smoothly exploring a career ([Bartley & Robitschek, 2000](#)). In brief, previous research has shown that in early adulthood, positive psychological states increase career exploration, but negative psychological states decrease career exploration.

There is a dearth of research on the effects of demographic variables on young adults' career exploration. However, previous research suggests that like adolescents, young adults at university engage in more career exploration activities towards the end of their studies than they do at the beginning of their studies (e.g., [Guan et al., 2015](#)).

2.3.2. Contextual antecedents of young adults' career exploration

Prior research has sought to examine the contextual antecedents of career exploration that are external to young adults themselves. The results suggest that compared to adolescents, individuals in early adulthood appear to rely less on the social support of their family and peers in exploring their careers. However, social support from educators continues to foster career exploration ([Cheung & Arnold, 2010](#)). The climates in which individuals are situated have been found to foster career exploration among individuals in early adulthood, as such climates may provide certain types of support. For example, caring climates strengthen the extent to which sporting team members engage in career exploration ([Poux & Fry, 2015](#)). Additionally, occupational engagement and levels of career exploration tend to increase in task-involving climates that promote skill improvement ([Poux & Fry, 2015](#)). Researchers have also examined the importance of the environmental context in which an individual is situated in shaping career exploration. For example, [Bartley and Robitschek \(2000\)](#) found that a supportive context characterized by perceived external search instrumentality (i.e., the perceived likelihood of obtaining a particular search outcome) could prompt career exploration. Conversely,

barriers in interpersonal contexts have typically been found to hamper career exploration. For example, Guan et al. (2015) found that parental career interference (e.g., controlling offspring's career development) had a negative effect on university students' career exploration and argued that such interference inhibits youths' autonomy, which in turn reduces their intrinsic motivations and causes them to engage less in career exploration.

In investigating the contextual factors influencing young adults' career exploration, extensive research has been conducted on interventions that enhance the instrumental support provided to individuals. Most interventions examined in previous research were designed to foster young adults' vocational interests and/or build their capacity to manage their careers. Typically, these interventions have been based on Holland's (1997) vocational interest profile. For example, Dozier et al. (2015) implemented the R Internet (a self-administered, self-scored and self-interpreted intervention based on Holland's RIASEC areas) to provide participants with career

guidance, and found that those who undertook the intervention engaged in a greater number of vocational exploratory behaviors and had explored more occupations in three weeks' time than those who did not participate in the intervention (the control group). In addition, in relation to the treatment group, those who identified more with their vocational areas tended to focus on exploring a smaller rather than a larger number of occupations. Stepping beyond a single intervention, Owens et al. (2016) implemented interest and/or strength interventions that had been designed to contribute to the career capacity of university students. They found that those who participated in either or both interventions showed a significant increase in the extent to which they explored their careers. They also found that the interest intervention had a stronger effect on career exploration than the strength intervention. Intervention studies suggest that instrumental support fosters career exploration. However, these findings have not yet been substantiated in other settings. Consequently, more research needs to be conducted to determine if contextual support fosters young adults' career exploration across a range of geographical contexts.

2.3.3. Outcomes of young adults' career exploration

Past empirical research has examined various outcomes of career exploration among young adults, including career-related decision-making processes, competences/knowledge/resources, identities, attitudes and behaviors. There is growing evidence to suggest that career exploration facilitates young adults' career-related decision making. For example, career exploration increases young adults' awareness of themselves and the world-of-work, thus enabling them to function better when making decisions related to their careers (Blustein, 1989). In numerous empirical studies career exploration has been found to enhance career decision self-efficacy or confidence (Cheung & Arnold, 2014; Cheung & Jin, 2016; Lent et al., 2016; Lent et al., 2017). In particular, career environmental exploration has been observed to strongly influence career decision self-efficacy longitudinally over time (Cheung & Arnold, 2014). Quasi-experimental research has also confirmed that career exploration contributes positively to an individual's career decidedness (Cheung & Jin, 2016). However, it should be noted that significant results have not been found in field research (Cheung & Arnold, 2014). Similarly, previous research on whether career exploration alleviates unfavorable experiences in decision processes has been inconclusive. For example, career exploration has been found to reduce career indecision (Park, Woo, Park, Kyea, & Yang, 2017), help to manage career distress associated with indecision (Praskova et al., 2015), and deal with other career decision difficulties, such as a lack and inconsistency of information (Xu et al., 2014). However, it has also been shown that young adults at university (e.g., adolescents) become more indecisive the more they explore their careers (Downing & Nauta, 2010). These conflicting findings suggest that while career exploration fosters higher career decision confidence/self-efficacy, it may not necessarily improve young adults' career decision-making processes. Since these conflicting findings seem not to be driven by cultural differences, differences in how career exploration has been measured or differences in sampled populations, our understanding of whether and in which situations career exploration influences career decision-making is limited. In order to address such gaps in our knowledge, future research should investigate contextual factors such as the level of career support and decision-making guidance, as suggested by career theorists (e.g., Lent et al., 1994; Savickas, 2002) which may accentuate or attenuate the influence of career exploration on career decision-making.

Career exploration may also help individuals build career-related capabilities/resources, knowledge, and competences (Flum & Blustein, 2000; Zikic & Hall, 2009). Drawing on career construction theory, Guan et al. (2015) found that Chinese undergraduates with higher levels of career exploration exhibited higher levels of career adaptability, which in turn influenced their self-regulatory capacities/resources in career development. This suggests that career exploration may increase individuals' motivation to obtain resources, allowing them to effectively cope with and/or adapt to complicated career and work environments (Savickas, 2002; Strauss, Griffin, & Parker, 2012). However, other studies have found no evidence that career exploration increases the career adaptability of Chinese undergraduates (Cheung & Jin, 2016). Such inconsistent findings may result from differences in how career exploration has been operationalized, as its significant effect on career adaptability exists only when exploration is self-rated (Guan et al., 2015) rather than manipulated in interventions (e.g., participation of career exploration course; Cheung & Jin, 2016). While intervention studies are usually regarded as being powerful in explaining casual relations, Cheung and Jin focused on the influence of a career exploration course on career adaptability using a pre- and post-test approach, but did not examine if actual changes in career exploration led to changes in career adaptability. Further work that assesses these constructs across multiple time points is needed to provide additional evidence of a causal link between career exploration and career adaptability.

Beyond psychological resources, career exploration has been found to affect young adults' acquisition of knowledge and skills. For example, Cheung and Arnold (2014) found that career exploration helped university students in Hong Kong obtain more career information and knowledge of themselves and work contexts. They further established that these information/knowledge gains were more likely to stem from environmental exploration than self-exploration, supporting the perspective that knowledge acquisition

occurs in complex contexts in which individuals seek new information (Tsai, 2001). As career exploration activities provide an opportunity for individuals to acquire knowledge and develop capabilities, it is unsurprising that career exploration has also been found to increase individuals' employability (Forstenlechner et al., 2014; Praskova et al., 2015). This is important given that employability serves as a critical personal coping resource in career development (Fugate, Kinicki, & Ashforth, 2004).

Researchers also assert that individuals engage in career exploration activities to develop a career identity, as the exploratory process helps them to construct and reconstruct a sense of self, develop coherent and clear interests, and clarify future career paths (Flum & Blustein, 2000; Savickas, 2002). Empirical evidence appears to support these assertions. For example, Praskova et al. (2015) found that young adults tend to exhibit a clearer career and professional identity when they engage more career exploration. Similarly, Lucas and Hunt (2002) found a positive correlation between career exploration and identity achievement among college students and argued that individuals who engage in career exploration are better able to define themselves and commit to their ego identity in a vocational setting over time. Thus, career exploration appears to assist in defining and constructing an individual

identity. However, empirical research also indicates that career exploration may not overcome issues related to identity diffusion among college students (Bartley & Robitschek, 2000; Downing & Nauta, 2010). Indeed, the effectiveness of career exploration in resolving identity issues appears to vary with the nature of the problem. For instance, while yet to be tested, there is possibility that the role of career exploration would be more salient at the identity formation/construction stage than the identity correction stage.

Previous studies on young adults have also extended the outcomes of career exploration to their vocational attitudes and behaviors. Career orientation/choice has been argued to result from exploratory activities (e.g., Chan, 2018). As Forstenlechner et al. (2014) found, the preferences, expectations, and attitudes of university students in the United Arab Emirates towards potential employers were largely derived from their career exploration, partly because these students understood what suited them the best. For example, they found that as career exploration increases, young adults' willingness to work in the private sector increases, but their expectations towards state employment do not. These findings appear to have been largely influenced by the social and economic environment in which the students were situated. Researchers have not examined this phenomenon in other settings. Therefore, a question still remains as to whether variations in career orientation resulting from career exploration depend on specific contexts (e.g., cultural or institutional contexts). Having examined young adults' career transitions from university to work, Werbel (2000) found that pre-employment career exploration, particularly environmental exploration, contributes to higher levels of job satisfaction during the initial stages of employment. Werbel also found that an exploration of the career environment leads young adults to exhibit higher levels of job-search intensity (i.e., to engage in more effort when searching for jobs), which consequently leads to enhanced levels of job satisfaction when employment is obtained. However, in examining why career exploration effects job satisfaction, Werbel failed to consider alternative explanatory mechanisms (e.g., enhanced resources, experiences and capabilities). Future research should explore the relative importance of such mechanisms vis-à-vis job search intensity in explaining the effects of career exploration on outcomes, such as levels of job satisfaction upon obtaining work. Overall, the literature suggests that career exploration can assist young adults to develop positive cognitions, attitudes, and behaviors that will benefit their own careers.

2.3.4. Career exploration as a mediator

The mediating role played by career exploration has been investigated in a number of studies conducted on young adults, primarily in East Asian contexts. For example, Cai et al. (2015) found that career exploration among university students in China explained the process by which self-esteem led young adults to develop positive perceptions of their future work selves and career adaptability. That is, having a proactive personality positively influenced individuals' perceptions of their future work selves and career adaptability by promoting career exploration. Also, with a focus on building career adaptability, Guan et al. (2015) found that career exploration among Chinese undergraduates transmitted the positive effects of parental support, and the negative effects of parental interference, on career adaptability. Park et al. (2017) found that career exploration among South Korean college students explained the process by which trait anxiety affected career indecision. Students with higher levels of trait anxiety were found to initially resist career exploration but were more inclined to engage in career exploration as time went on and consequently, experienced lower levels of career indecision. These empirical findings appear to be consistent, collectively highlighting that career exploration is a key mechanism which explains the effects of personality traits and social support on career related outcomes.

2.3.5. Moderators of career exploration among young adults

Although limited, researchers have begun to examine the boundary conditions of the relationships between career exploration and its antecedents/outcomes. Our review suggests that these relationships are contingent on a variety of individual and contextual factors. Individual moderators of the antecedents and career exploration relationships mainly include self-perceptions and personality. For example, Hardin et al. (2006) found that self-construal (i.e., how an individual sees him/herself in relation to others) moderated the relationship between social anxiety and environmental exploration among men but not women. Specifically, social anxiety is more likely to cause men with lower independence to withdraw from environmental exploration. Additionally, Hardin et al. found that interdependence enhanced environmental exploration among men with low, but not high, independence. In another study rooted in career construction theory and self-verification theory (Swann Jr, 1983), Cai et al. (2015) found that self-esteem has stronger effects on career exploration among university students with high (as opposed to low) levels of proactive personality. Thus, it appears that relatively stable individual attributes (e.g., identity and personality) accentuate or attenuate the role of psychological states in shaping career exploration. However, these findings would benefit from further validation in future research. In addition, Praskova et al. (2015) showed that as career calling increased, the indirect effects of career exploration on perceived employability via enhanced career identity became stronger. Similarly, they found that among those with stronger career calling, career exploration

was more likely to reduce career distress via enhancing career identities. This work appears to suggest that career exploration generates greater personal benefits for individuals whose dispositions are congruent with their intrinsic motivation/values, which is consistent with SCCT and career construction theory.

To date, no research has been conducted on the contextual moderators that explain the effects of career exploration. However, some recent studies have begun to examine the moderating roles of contextual factors on the relationships between career exploration and its antecedents. For example, [Guan et al. \(2015\)](#) found that parental career-specific behaviors interact to influence university students' career exploration. More specifically, they found that when parents involve themselves more in university students' career preparation, provision of parental support (i.e., encouragement) is more likely to promote their child's career exploration while parental interference (i.e., attempts by parents to control career behaviors) is more likely to demotivate students' career exploration. Given a dearth of research on the boundary conditions underlying the relationship between career exploration and its antecedents among adolescents, we call on researchers to examine the interactive effects of individual characteristics and contextual factors on career exploration. Such empirical work is desperately needed given that SCCT, career construction theory, and [Holland's \(1997\)](#)

theory of careers (e.g., person-situation interaction) all highlight the need to study how personal and situational (contextual) variables interact to predict an individuals' attitudes and behaviors towards careers.

2.4. Career exploration during established adulthood

In relation to the later stages of adulthood, research suggests that while individuals continue to explore their careers, the focus of career exploration tends to differ to that undertaken in adolescence and early adulthood ([Lent & Brown, 2013](#)). For example, the career exploration of young adults mainly focusses on preparing for work and engaging in broad activities that are vocationally relevant, particularly in the context of the school-to-work transition. Conversely, except for the unemployed, established adults primarily seek to maintain what they have achieved in previous life and career stages and narrow their focuses to specific job-related activities, while keeping their eye on the broader career environment ([Lent & Brown, 2013](#); [Super et al., 1996](#)). At this stage, the skills and interests that individuals explore become more targeted, as adults have usually already established a career identity from the exploratory activities that they undertook in previous career stages. Generally, established adult employees tend to explore developmental opportunities ([Taveira & Moreno, 2003](#)). In contrast, unemployed adults, those at risk of losing employment or those in undesirable employment, prioritize re-employment as the key focus of career exploration ([Koen et al., 2010](#)). Empirical research has focused less on those in established adulthood than those in adolescence and early adulthood. Indeed, only eight articles were identified that examined the antecedents and outcomes of career exploration among established adults.

2.4.1. Antecedents of established adults' career exploration

Researchers have been particularly interested in the factors that increase or decrease adults' career exploration during adverse situations. Existing research on working adults has concentrated on employees' search for employment outside the organization at which they are currently employed rather than their exploration of developmental opportunities in their current workplace. In the workplace setting, job dissatisfaction has been identified as a trigger that leads employees to engage in career self- and environmental exploration in relation to external job opportunities ([Klehe et al., 2011](#)). This phenomenon has been observed in the context of downsizing where redundancy has been found to lead to a dramatic increase in career exploration among employees ([Klehe et al., 2011](#)).

In the counseling context, [Littman-Ovadia \(2008\)](#) examined the role of career crises or critical career decisions as antecedents of career exploration. They found that adult clients with high anxiety and avoidance attachments in their personal life (e.g., experiences in close relationships) were less likely to engage in career exploration, but that the negative effects of these attachment dimensions reduced when career counselors function as a secure base for the clients. According to [Elad-Strenger and Littman-Ovadia \(2012\)](#), a secure base can be established by enhancing the agreement between the client and the counselor in terms of goals and tasks; this agreement has been found to promote career exploration among adults seeking career advice and support. Examining the role of social support, [Zikic and Klehe \(2006\)](#) found that instrumental career support in terms of the provision of useful information and advice is particularly helpful in driving career exploration of unemployed, mature adults. These findings are consistent with those from research on adolescents and young adults which found that social support fosters career exploration.

2.4.2. Outcomes of established adults' career exploration

As stated above, only limited research has been conducted on the career exploration of established adults. However, some evidence suggests that career exploration influences established adults' perceptions of work/careers, their attitudes and their behaviors in different situations. In normal workplace contexts, both career self- or environmental exploration have been shown to foster employees' perceptions of person-organization fit and person-job fit ([Nie, Lian, & Huang, 2012](#)), as career exploration enhances the alignment between working adults' vocational identities and their work/career contexts ([Gross-Spector & Cinamon, 2018](#); [Nie et al., 2012](#)). Employees' exploration of their careers within their organizations has also been found to enhance their training performance ([Rowold, 2007](#)). However, in periods of organizational downsizing, career exploration tends to foster negative outcomes (e.g., reduced loyalty and increased turnover intentions) that ultimately increase employees' actual voluntary turnover ([Klehe et al., 2011](#)). Although employers' perceptions of employees' career exploration may be negative due to its negative influence on employees' loyalty and intention to stay, employees themselves are more likely to view career exploration positively, as it enables

them to manage their careers in risky or unsecure employment situations. In addition, [Koen et al. \(2010\)](#) conducted a study with unemployed adults and found that career exploration, as an adapting approach to the career environment, assisted individuals to obtain quality re-employment. As individuals engage more in career exploratory activities, they tend to have a better choice of job search strategies and thus be more efficient at obtaining re-employment.

2.4.3. Career exploration as a mediator

Career exploration has also been treated as a mediator in samples of adults in employment or seeking employment. [Klehe et al. \(2011\)](#) found that employees' career exploration explained the process by which job satisfaction influenced both loyalty and exit intentions and the process by which job satisfaction and redundancy influenced turnover behaviors. They found that job satisfaction enhanced employees' loyalty and decreased their exit intentions and actual turnover as a result of reduced engagement in career exploratory activities. Conversely, they also found that redundancy eroded loyalty and increased exit intentions and actual turnover by boosting employees' career exploration. [Zikic and Klehe \(2006\)](#) demonstrated that environmental exploration explained the effects of instrumental social support (e.g., career information and advice) on the re-employment quality of unemployed people. Their findings suggest that instrumental career support motivates the unemployed to explore career environments and subsequently leads

them to obtain employment; however, they did not find that self-exploration mediated this relationship. In other words, instrumental support leads to quality re-employment mainly through motivating individuals to explore the environment rather than the self. While only limited research has examined career exploration as a mediator, the findings of this research indicate that career exploration serves as a mechanism that explains why and how individual and environmental factors lead to certain career or work outcomes. Future research should seek to examine the role of career exploration as a mediator across a larger number of contexts to validate the generalizability of these findings.

2.4.4. Moderators of career exploration among established adults

Researchers have begun to investigate whether career exploration by established adults is the result of an interaction between personal dispositions and contextual factors. Drawing on the attachment perspective ([Bowlby, 1980](#)), [Littman-Ovadia \(2008\)](#) found that counselor effectiveness and individual attachment dimensions interacted to predict career exploration and that when counselors were more effective, attachment anxiety and avoidant attachment were less likely to hinder counselees' career exploration. Researchers have also found that the effects of career exploration are contingent on personal dispositions. For example, [Nie et al. \(2012\)](#) found that the relationship between career exploration and fit with the work environment was stronger among individuals with stronger preferences for job comfort/security or lower preferences for status and independence. Career theories ([Lent et al., 1994](#); [Lent & Brown, 2013](#); [Savickas, 2002](#)) generally postulate that exploratory behaviors result from an interaction between the person and the environment in which they are located. However, no research appears to have examined which individuals are more likely to engage in career exploration among established adults as a result of contextual influences. Future research should seek to address this gap in the literature.

2.5. Summary of extant research on career exploration

A summary of the existing empirical evidence in relation to the antecedents, outcomes, and moderators of career exploration is presented in [Fig. 1](#). The literature review has led to a number of important insights. First, it revealed that career exploration is driven by a mix of personal (i.e., intrapersonal) and contextual (i.e., interpersonal) factors. This body of work is consistent with both traditional (e.g., [Jordaan, 1963](#)) and contemporary (e.g., [Flum & Blustein, 2000](#); [Lent & Brown, 2013](#); [Savickas, 2002](#)) theoretical perspectives that have conceptualized career exploration as resulting from an interplay between the individual and the environment. Second, the review showed that consistent with the CSM framework ([Lent & Brown, 2013](#)), which is rooted in SCCT ([Lent et al., 1994](#)), individuals must assume some level of personal agency to engage in career self-management. It is this agency that will lead them to develop career-related goals and engage in exploratory behaviors (e.g., self- and environmental exploration) in relation to career planning and progression, which in turn may produce positive career and work outcomes (e.g., [Lent et al., 2016](#); [Lent et al., 2017](#)). Consistent with theoretical assertions, the antecedents described in the CSM framework, such as an individual's self-efficacy beliefs (e.g., career decision self-efficacy) and positive expectations (e.g., hope and intrinsic motivations), have consistently been found to cause individuals to engage in career self-management. Third, the review revealed that career exploration is increasingly being conceptualized as an adaptive behavior or mechanism that leads to positive career outcomes ([Hirschi, 2009](#); [Lent & Brown, 2013](#); [Savickas, 2013](#)). Career construction theory suggests that individuals use an adaptive process to develop and construct their careers and achieve a congruence between the self and the environment, which ultimately benefits vocational development ([Savickas, 2002, 2013](#)). In accordance with this theoretical perspective, career exploration has been viewed as a lifelong process that can assist individuals to adapt to a dynamic and changing "world-of-work" and find a career that fits their specific needs and interests ([Hirschi, 2009](#); [Neureiter & Traut-Mattausch, 2017](#)). The review of the literature suggests that this process begins in childhood and adolescence when, as a result of exploring career options, individuals acquire occupational knowledge, develop career goals, and form a vocational identity. As individuals reach early adulthood and transition from education to work, career exploration enables them to enhance their capabilities resources and knowledge, become clearer about their career identity, and make effective career decisions. In established or mid to late adulthood, individuals engage in career exploration to obtain more suitable employment opportunities that fit their specific needs and interests.

Additionally, the review of the empirical research revealed several gaps in the literature. First, the dynamic, life-span perspective is yet to be supported by empirical research. Indeed, only limited research has been conducted on how career exploration changes across life developmental periods. Further, given that most research has focused on career exploration at the adolescence and early adulthood stages, very little is known about the nature of and factors driving career exploration during childhood and late adulthood. Second, there is a lack of empirical evidence on the mediation mechanisms through which career exploration affects individuals' career and work outcomes. Consequently, knowledge as to why and how career exploration leads to positive outcomes in one's vocational development remains limited. Third, the boundary conditions underlying the development and effects of career exploration have not yet been the subject of sufficient investigation. In particular, the interactive effects of individual and contextual antecedents on career exploration have rarely been examined, as studies have largely focused on unique rather than combined effects. Fourth, several methodological issues are prevalent in the existing body of work on career exploration. The mismatch between how career exploration has been conceptualized and measured, the reliability of causal inferences, measurement validity, and common method variance (CMV) are a number of methodological issues hindering empirical advancements within the literature. Fifth, researchers have failed to consider the effects of some important contexts on career exploration. For example, only limited research has been conducted on how the work context, the social/interpersonal context, and the broader institutional/economic context effect career exploration. As discussed further below, such weaknesses and gaps should inform future research endeavors to ensure advancements in career exploration research.

Fig. 1. A summary of the empirically verified nomological network of career exploration research.

3. An agenda for future research in career exploration

The review of the literature revealed that in the new millennium, following the initial work of the late 20th century, research on career exploration has flourished. Specifically, the review examined how career exploration has been conceptualized and measured in previous work and examined the nomological network of constructs to which it has been linked. In the remaining sections, an agenda for future research is proposed that outlines a number of opportunities for theoretical and empirical advancements within the literature.

It is acknowledged that career development is a lifelong process and that career exploration occurs across the life span (Flum & Blustein, 2000; Stumpf et al., 1983; Super, 1980). However, previous studies have not effectively integrated the life-span perspective into the examination of differences as to why and how individuals engage in career exploration. Our review of the empirical research highlighted that at specific life developmental stages individuals may engage in or step away from career exploration for a variety of different reasons. However, it remains unclear whether some of these reasons explain career exploration in a preceding or following phase of a particular life stage. Similarly, little is known about the time point(s) at which the documented reason(s) underlying career exploratory behaviors start to fade or become more influential. For example, based on the current literature, it is uncertain whether personality, which has been found to drive or inhibit adolescents and adults' career exploration behaviors (Li et al., 2015; Reed et al., 2004), also plays a role in explaining children's engagement in such behaviors. Personality shaping usually changes dynamically during childhood and personalities tend to become more stable as individuals move forward to more developed life stages (Caspi, Roberts, & Shiner, 2005). Future research on career exploration processes should examine whether and how variations in personality across the life span affects the type of, the attitudes towards, and the extent to which individuals engage in career exploration.

An overarching parsimonious framework should be adopted if a life-span perspective is to be incorporated into empirical research. Lent and Brown (2013) extended upon previous work (e.g., Super et al., 1996; Turner & Lapan, 2013) with their recently proposed career development framework. Under their framework, career exploration, while treated as a separate developmental period, is conceptualized as occurring in all life stages from adolescence onwards. This framework could provide researchers with a starting point for conceptualizing and testing the life-span nature of career exploration. Future research should also seek to extend the framework to the pre-adolescent stage and examine how individuals explore their career before adolescence, the individual and contextual factors affecting such exploration, and how exploration in pre-adolescence affects exploration in subsequent life stages. Future work should also look at differences in how individuals engage in career exploration at different life stages. Notably, specific consideration should be given as to how unique contextual factors and personal issues faced during different life stages foster or hinder career exploration. In investigating these issues, researchers could also draw on socioemotional selectivity theory (Carstensen, 1995) that suggests that individuals' priorities change as they get older and consequently affect how they interact with others around them. The findings of any such research might show that individuals adopt different attitudes and approaches when exploring their careers during different life stages.

Relatedly, as a potential contribution to the life-span perspective of career exploration, the study of career exploration needs to be extended to populations other than adolescents or individuals in early adulthood, as such samples have largely dominated previous research. Relying heavily on student samples, the existing research emphasizes career exploration as an approach or process one must undergo to enter employment. However, this approach is inconsistent with the contemporary view that career exploration does not cease at the time of employment (Flum & Blustein, 2000; Lent & Brown, 2013). The review suggests that adolescents or early adults in the pre-employment stage largely explore the self and the environment to develop career interests and seek job opportunities. As discussed above, the boundaryless nature of careers requires people to continuously engage in career exploration across their life span (Flum & Blustein, 2000). Thus, more work is needed to examine what triggers individuals to explore and the different ways in which they explore at different stages of their lives (Blustein, 2006). Younger individuals are often at the stage of their lives where exploration is important. However, emphasis should also be placed on the career exploration of older individuals, such as adult and aged workers, who tend to engage in self- and environmental exploration for professional development or enhancement (Gross Spector & Cinamon, 2018). As highlighted above, established and aged workers are likely to differ from adolescents and individuals in early adulthood in terms of how they explore their careers due to differences in their goals and how they perceive the world more generally (Rowold, 2007). Additionally, we suggest that due to an ability to access additional contextual resources and the presence of greater constraints/barriers, the career exploration process of established adult workers might differ significantly from that of younger generations. For example, older generations of workers may experience additional pressure because of greater family and workplace responsibilities, which may serve as both motivators and constraints for them in exploring their future careers.

3.2. The mediating processes underlying the effects of career exploration

To date, the literature has largely focused on the antecedents and outcomes of career exploration and failed to investigate the mediating factors that explain its relationship with such antecedents/outcomes. Research findings on the outcomes of career exploration have begun to identify a number of potential mediators e.g., career identity (Praskova et al., 2015) and (re)employment quality (Zikic & Klehe, 2006) that might explain its effects. However, empirical research on these mechanisms remains scarce. Future research should urgently seek to examine the underlying mechanisms that help us understand how and why career exploration influences important career and work outcomes. In the following paragraphs, several mediation processes are suggested that should be the subject of investigation in future studies.

First, future research should examine whether person-environment fit mediates the effect of career exploration on individuals' career outcomes. Career construction theory (Savickas, 2002) suggests that individuals identify or impose meaning upon their experiences and behaviors in a vocational setting to gain a person-environment congruence that facilitates career development. Building on this assertion, it appears that an individual's exploration of individual and contextual attributes could lead to that individual finding a fit between the self and the environment in which they work, and thus to their development of positive career related attitudes (e.g., increased career commitment and satisfaction) and behaviors (enhanced career choice and engagement) (Holland, 1997).

Second, future research should examine whether career adaptability mediates the effect of career exploration on career outcomes. Drawing on career construction theory, which suggests that an individual's exploration of his/her vocational surroundings fosters concern, control, curiosity and confidence over his/her career (Savickas, 1997, 2002), we might expect career exploration to foster positive career outcomes by eliciting higher levels of career adaptability. Empirical work suggests that career exploration predicts career adaptability (Guan et al., 2015) and that career adaptability fosters positive perceptual, attitudinal, and behavioral outcomes (Jiang, 2016; Rudolph et al., 2017). However, the mediating effects of career adaptability on the relationship between career exploration and career outcomes have not been fully explored.

Third, future research should adopt a self-determination perspective to study the psychological processes through which career exploration fosters individual outcomes. Deci and Ryan (1985) argue that exploratory activities could be viewed as an aspect of self-determination that motivates people to engage with their careers and work (Gagné & Deci, 2005). Specifically, by continuously exploring various aspects of their career, individuals might develop competence, obtain autonomy, and feel relatedness and thus achieve higher levels of self-determination. Future research should draw on self-determination theory to identify the psychological mechanisms that underlie the relationship between career exploration and career outcomes, such as choice effectiveness, subjective career success, and career aspiration.

Finally, career exploration should be considered a key source of core self-evaluation that reflects an individual's levels of self-efficacy, self-esteem, locus of control, and emotional stability (Judge, Erez, Bono, & Thoresen, 2003). Such traits have been shown to assist individuals to adapt and progress positively to different career contexts. Although empirical work has not yet investigated the mediating effects of core self-evaluations on the relationship between career exploration and career outcomes, the literature suggests that individuals' reflections upon and/or analysis of individual and contextual factors enhance their core self-evaluations (Jiang et al., 2017; Park, 2007; Stumpf & Tymon, 2012), which in turn can lead to positive career outcomes, such as reduced decision difficulties (Di Fabio, Palazzeschi, & Bar-On, 2012) and increased career role success (Ferris et al., 2013).

3.3. Moderators of developments and effects of career exploration

As stated above, our review of the literature revealed that only limited research has been conducted on the boundary conditions that influence the relationship between career exploration and its antecedents/outcomes. A small number of studies have focused on the contingency factors that strengthen or weaken the influence exerted by the antecedents of career exploration. However, very little research has been conducted on the moderators of the relationship between career exploration and its outcomes. Future research should seek to increase knowledge of the circumstances in which individuals from certain backgrounds or with certain personalities have greater motivation to explore their careers and when or for whom career exploration is more beneficial. Such knowledge would enable career psychologists and counselors to design targeted interventions that draw on existing resources to boost career exploration and maximize the benefits that people can obtain from career exploration. To shed further light on this area, this study proposes several potential boundary conditions or moderators that are worthy of investigation in future research.

First, drawing on person-situational theories, such as CSM (Lent & Brown, 2013) and SCCT (Lent et al., 1994), researchers should seek to examine how individual and contextual factors interact to predict the extent to which individuals will engage in career exploration. It is likely that the effects of personal factors will vary in magnitude in response to situational factors. For example, individuals high in openness to experience (a Big Five personality trait; Barrick & Mount, 1991) may be more likely to engage in career exploration when faced with uncertainty in their working lives, as such individuals are more willing to accept change and seek new opportunities. Similarly, it is also likely that personal characteristics (e.g., demographics, values and attitudes) will moderate the effects of contextual factors on career exploration. For example, drawing on social role theory (Eagly, 1987), which indicates that women's careers tend to be more constrained by family responsibilities, it might be expected that work-family conflict will have more negative effects on career exploration among women than men, and that a strong work-life balance will have more positive effects.

As well as examining how individual and contextual factors interact to predict career exploration, researchers should seek to ascertain which may moderate the relationship between career exploration and its outcomes as suggested by the CSM framework (Lent & Brown, 2013). Specifically, researchers should investigate whether individuals with certain personality traits will be able to utilize the insights (i.e., benefits) they derive from career exploration. For example, in the process of career exploration, individuals with higher levels of self-regulation, self-control, and self-discipline may be more effective at handling issues that emerge from exploratory activities and thus obtain better outcomes. It is also likely that individuals with higher levels of commitment to career skill utilization will obtain greater benefits from the new knowledge they acquire during the process of career exploration, and thus exhibit greater professional development and career satisfaction, and be more likely to achieve success in their careers. Additionally, the behaviors of others will likely influence the strength of the relationship between career exploration and career outcomes. For example, a lack of social support might not only reduce the extent to which individuals engage in career exploration, but could also influence the extent to which they develop or utilize the insights they obtain from the process of exploration.

3.4. Methodological advancements

Several methodological shortcomings were identified that future research on career exploration should seek to resolve. The first is the lack of clarity as to how career exploration has thus far been conceptualized and measured. Many studies have adopted Stumpf et al.'s (1983) approach to career exploration and examined the purposive behaviors and cognitions individuals consider when accessing career information. These studies employed behavior-oriented subscales that direct little attention to the cognitive

aspects (e.g., beliefs) of individuals. Other studies (e.g., [Gamboa et al., 2013](#)) have narrowed the conceptualization to focus on self- and

environmental exploration but adopted a scale that measures career exploration more widely (i.e., the CES), or have drawn upon the subscales that capture self- and environmental exploration but only vaguely conceptualize career exploration as a process that evolves over time (e.g., [Cheung & Arnold, 2014](#)) or a process that is triggered during transitions in life (e.g., [Zikic & Hall, 2009](#)). There is additional research (e.g., [Rowold, 2007](#)) that has treated career exploration as an attitudinal concept but defined it in the form of purposeful actions involved in the exploration process and measured it using the full version of CES. This mismatch in how career exploration has been conceptualized and measured is evident in a growing number of studies. Further, a number of studies have failed to provide definitions of career exploration or justifications for the use of particular measures, leaving the conceptual rationale of these studies unclear (e.g., [Rogers, Creed, & Glendon, 2008](#)). It is acknowledged that some research has measured career exploration consistently with how it has been conceptualized ([Lee et al., 2016](#); [Werbel, 2000](#)). However, it is concerning that a mismatch between conceptualization and measurement exists in a significant proportion of previous research. This issue needs to be rectified in the future.

A second issue relates to the construct validity of the career exploration measures. As stated above, most studies have adopted [Stumpf et al.'s \(1983\)](#) CES subscales of self- and environmental exploration on the bases that together these two dimensions are sufficiently reflective of career exploration. Unfortunately, the review revealed that the majority of studies that used these subscales have not shown how self-exploration is empirically different from environmental exploration or whether the two dimensions aggregated together measure career exploration at a higher level overall. Of the small number of studies that have performed CFA on these subscales (e.g., [Rowold & Staufenbiel, 2010](#); [Werbel, 2000](#)), none appear to have examined whether career exploration can be operationalized as a higher order construct (i.e. whether the two sub-dimensions exhibit adequate discriminant and convergent validity). In the absence of this information, it is unclear whether the exploration of the self and the environment can be aggregated to form an overall career exploration (e.g., [Koen et al., 2010](#); [Lent et al., 2016](#)) or whether they would be better treated as separate but related constructs (e.g., [Xu et al., 2014](#); [Xu et al., 2016](#); [Zikic & Klehe, 2006](#)). Future work is encouraged to test the discriminant validity of these two dimensions of exploration to identify the legitimization of combining the two in empirical analyses.

The third issue relates to an inability to draw causal inferences from previous research on career exploration (limited causal inferences can be drawn as more than two thirds of the reviewed studies adopted a cross-sectional design). Approximately 20 studies collected data at two or more time points. However, half of these studies merely adopted this procedure to alleviate CMV and did not implement real longitudinal designs with repeated measures. Except for two studies ([Elad-Strenger & Littman-Ovadia, 2012](#); [Park et al., 2017](#)), previous research that relied on two waves of data collection failed to meet the minimum requirement for longitudinal studies (i.e., of three waves), which allows for changes over time to be tested ([Ployhart & Ward, 2011](#)). Additionally, only two studies have previously adopted an experimental design to measure the effects of career exploration ([Cheung & Jin, 2016](#); [Dozier et al., 2015](#)). This is disappointing given that experimental research is considered a powerful method for identifying causal effects.

Given the limitations inherent in the previous research, it would be premature to draw causal inferences between career exploration and the nomological network of variables to which it is related. As such in future research scholars should implement longitudinal panel designs or experimental designs to reduce the potential for endogeneity and allow stronger causal inferences to be drawn. Such an approach could also lead to inconsistent findings within the literature being reconciled. For example, several studies showed that career decision self-efficacy is an antecedent of career exploration (e.g., [Chiesa et al., 2016](#)) while other studies found that it was an outcome (e.g., [Cheung & Jin, 2016](#)). Similarly, previous studies appear to have treated both career identity and interests as antecedents ([Lucas & Hunt, 2002](#)) and outcomes of career exploration ([Hirschi, 2011](#)). Future research should implement experimental or longitudinal studies to investigate whether these constructs are antecedents or outcomes of career exploration. Additionally, researchers should also measure individuals' real-time experiences of career exploration via the use of diary studies or experience sampling methods ([Larson & Csikszentmihalyi, 1983](#)). This would allow researchers to pinpoint the factors that lead individuals to engage in career exploration more accurately, especially during periods of career transition in which individuals are exploring their career options daily or every few days ([Kreemers & Van Hooft, 2017](#); [Song, Uy, Zhang, & Shi, 2009](#)).

A final methodological concern relates to the use of single source, self-report data, as such data increase the potential for CMV, especially if collected at a single time point. Some scholars have argued that the effects of CMV have been overestimated. However, it is generally acknowledged that the relationships between variables measured at a single time point using the same method or source tend to be inflated. Further, while the risk of CMV has been acknowledged in some studies (e.g., [Downing & Nauta, 2010](#); [Duchesne et al., 2012](#)), the majority of studies have failed to adopt any remedies to check for or address CMV issues (e.g., the separation of independent and dependent variables in surveys, Harman's one-factor test, and the latent-method-factor CFA; [Podsakoff, MacKenzie, & Podsakoff, 2012](#)). The CMV issue not only exists in cross-sectional studies, it also exists in studies with time-lagged designs ([Cai et al., 2015](#); [Klehe et al., 2011](#)). To alleviate CMV, a call is made to researchers to collect data on independent, mediating, and dependent variables at different time points (e.g. [Guan et al., 2015](#)). Researchers should also consider using other-rated measures in future to capture the outcome variables associated with career exploration ([Rowold, 2007](#)).

3.5. Further empirical extensions

In addition to future research analyzing the mediation mechanisms and boundary conditions of the career exploration process and addressing the aforementioned methodological issues, future research should also extend the empirical investigation of career

exploration in a number of ways. First, given that individuals' cognitions and behaviors in the career exploration process may be shaped by interpersonal interactions with different social groups, it is imperative that future research investigates whether career exploration can be conceptualized and measured as a group-level phenomenon. For example, students in the same school or university may be affected by similar policies, cultures, and approaches to career guidance and their school/university peers (Nuñez & Kim, 2012;

Reynolds, Teddlie, Hopkins, & Stringfield, 2000). This may lead them to form shared cognitions and behaviors in relation to self- and environmental exploration. Similarly, due to the potential of social contagion among employees (Meindl, 1995), shared cognitions and behaviors in relation to career exploration may exist at the workgroup and organizational level. From a broad perspective, schools, universities, workgroups, and organizations represent group contexts in which collective career exploration among group members could be observed. Based on our review, to date, no empirical studies have examined whether group-level career exploration exists, how it can be measured, and whether it is different from career exploration at the individual level. Researchers are called upon to explore these issues and examine the factors affecting the level and strength of career exploration at the group level. Researchers could build on the existing work of Noack et al. (2010) by adopting a multilevel approach to study the factors at the group level that influence career exploration at the individual level. In summary, future research should seek to explore the multilevel phenomenon in career exploration research by examining the group-level factors that predict career exploration at both team and individual levels and the subsequent effect of career exploration at different levels on group and individual outcomes.

Second, in line with the dynamically changing world, future research should take into account the influence of institutional, economic, and technological factors on individuals' exploratory behavior. Such factors have received limited attention in career exploration research, but may serve as a trigger to shape or change individuals' mindsets or attitudes towards the world-of-work and thus lead individuals to reduce or increase their career exploratory behaviors (Heyes, 2011). From an institutional perspective, a context with strong labor protection is likely to reduce the likelihood that currently employed workers would explore external job opportunities or development opportunities, as labor protection should enable such workers to feel secure about their current employment (Gangl, 2003). Due to the increased job security that results from labor protection, these workers might also become less proactive in exploring their own career interests and strengths. Economic recession is another factor that could affect individuals' career exploration. Indeed, an economic recession could cause employees to explore the self and development opportunities within the organization to gain a competitive advantage in a shrinking job market (Manroop & Richardson, 2016). Clearly, technological advancement in the past decades has changed the way people seek career-related information and such changes are likely to continue. Thus, technology has rapidly become a non-negligible factor that influences individuals' career exploratory activities. How different domains of technology and individual differences in the use of technology can impact people's engagement and success in career exploration might be new areas of investigation. It should be noted that these phenomena might vary among individuals at different life stages or in different circumstances. For example, adolescents and young adults seeking employment may devote more efforts to career exploration given that labor protection might limit employment opportunities and thus increase competitiveness in the labor market. An economic recession may force such individuals to further explore the self and the job market to progress in their careers. Researchers should also examine whether generational differences influence the extent to which individuals use technology in career exploration.

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