Bending with the Wind:
An Integrative Process Model of Career Adaptation

by

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of The Australian National University

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Signed Statement of Originality

The work presented in this thesis is, to the best of my knowledge, my own work, except as acknowledged in the text and declaration statement. The material has not been submitted, either in whole, or in part, for a degree at this or any other university.

Laramie R. Tolentino
Declaration for a Thesis by Publication

In accordance with The Australian National University Programs and Awards Statute – Research Award Rules (No.2) 2013, I hereby declare that this thesis contains no material which has been accepted for the award of any other degree or diploma at any university or equivalent institution and that, to the best of my knowledge and belief, this thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

This thesis includes 3 original papers published in a peer reviewed journal (i.e., Journal of Vocational Behavior). The core theme of the thesis is career adaptability. The publications report on original research conducted by the candidate during the course of the candidature. The ideas, development and writing of all the papers in the thesis were the principal responsibility of myself, the candidate, working within the Research School of Management under the supervision of Professor Prashant Bordia (Co-Chair), Professor Simon Lloyd Restubog (Co-Chair), Dr. Andrew Bradly (Panel Member) and Dr. Alessandra Capezio (Panel Member).

The inclusion of co-authors reflects the fact that the work came from active collaboration between researchers and acknowledges input into team-based research. In the case of the published thesis chapters, the candidate is the primary author and contributed greater than 50% of the content in the publication. A substantial portion of the initial draft was written by the candidate and any subsequent editing in response to co-authors and editors reviews was performed by the candidate. Furthermore, the candidate reported in the thesis the results of additional data analyses that were not included in the final published manuscripts due to page limit constraints. Finally, the publications are not subject to any obligations or contractual agreements with a third party (i.e., Elsevier Publishing Company) that would constrain its inclusion as chapters in the thesis.
This is a PhD thesis by publication and the following three publications have been compiled as Papers 1, 2, and 3 (i.e., Chapters 2, 3, and 4 respectively).

### Chapter 2

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- performed literature review, data analysis and interpretation.  
- developed research ideas, models, and arguments based on Career Construction Theory.  
- led research team discussion of study design and execution.  
- wrote substantial sections of the manuscript (e.g., abstract, introduction, theory, discussion, and conclusion).  
- addressed co-authors and editors reviews and edited the manuscript accordingly.  
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- developed research ideas, models, and arguments based on Career Construction Theory.
- led research team discussion of study design and execution.
- wrote substantial sections of the manuscript (e.g., abstract, introduction, theory, results and discussion)
- addressed co-authors and editors reviews and edited the manuscript accordingly.
- acted as corresponding author.

Candidate’s Declaration

I declare that the publications above meet the requirements to be included in the doctoral thesis.

Candidate’s name
Laramie Tolentino

Candidate’s signature

Date
17 April 2015
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“At times our own light goes out and is rekindled by a spark from another person. Each of us has cause to think with deep gratitude of those who have lighted the flame within us.” — Albert Schweitzer

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Dedication

This thesis is dedicated to my beloved father,

Jose S. Tolentino (†)

Thank you for setting me on this path,

with enduring love and hope.


Guided by the Career Construction Theory (CCT; Savickas, 2013), this program of research examined an integrative process model of career adaptation and provided construct validity evidence for the career adaptability measure (i.e., Career Adapt-Abilities Scale). Three empirical studies were carried out to clarify the relationships between adaptivity, adaptability, and adaptation outcomes across career stages and contexts. These studies offer empirical groundwork to test the theoretical assertions of CCT. Furthermore, it elaborates the existing nomological network of career adaptability by investigating its dispositional antecedents, socio-cognitive mechanism, and career success outcomes. Altogether, the current research aims to explicate how individuals enact their careers while successfully adjusting to changing work demands and conditions.

The primary objective of empirical paper 1 was to examine the dispositional antecedents of career adaptability and provide factorial and convergent validity
evidence for the Career Adapt-Abilities Scale (CAAS) among Australian university students (N = 555). Path analysis was performed to test the relationship between proactive personality, learning goal orientation, career optimism, and career adaptability. The hypothesized relationships were supported. Results also confirmed the factorial and convergent validity of CAAS and it demonstrated internal consistency over a 4-week interval between measurements.

To further provide validity evidence and extend the CCT model in the entrepreneurial career context, empirical paper 2 examined the outcomes of career adaptability using a sample of Serbian business students (N = 380). Results supported the moderated mediation model and as predicted: (a) career adaptability was positively associated with entrepreneurial intentions and (b) the mediated relationship between career adaptability and entrepreneurial intentions via entrepreneurial self-efficacy was stronger for individuals with prior exposure to family business. Once again, the results demonstrated evidence for internal consistency and construct validity of CAAS.

Finally, empirical paper 3 examined the overall model of successful career adaptation by investigating the relationship between adaptivity (e.g., tenacious goal pursuit and flexible goal adjustment) and career success outcomes (e.g., career satisfaction and promotability) via career adaptability. It also tested the validity and psychometric utility of CAAS in a non-Western and developing economy context. Results demonstrated evidence for internal consistency and convergent validity of CAAS in a sample of Filipino university students (N = 289) and working adults (N = 495). Furthermore, the proposed mediated model was supported and as predicted: (a) tenacious goal pursuit and flexible goal adjustment was positively associated with career adaptability, (b) career adaptability was positively associated with career success outcomes, and (c) tenacious goal pursuit and flexible goal adjustment was indirectly related to career success outcomes via career adaptability.
Taken together, the present research was able to bring robust contributions to further our understanding of career adaptability. First, it substantiated the psychometric utility and construct validity of the CAAS across career stages and contexts over a period a time. As a whole, the empirical studies shed light on how individuals, in both organizational and entrepreneurial career pathways, use their self-regulation resources to successfully navigate through transitions in an increasingly complex career landscape. Theoretical and practical implications, and research directions are provided.
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Chapter 1: Context Statement

Bending with the wind: An integrative process model of career adaptation

“Uncertainty is the only certainty there is, and knowing how to live with insecurity is the only security.” (Paulos, 2003)

1. Significance of Career Adaptability Research

In today’s fast-paced work environment, individuals increasingly deal with uncertainty and simultaneously tackle multiple novel demands brought about by technological innovations, economic volatility, organizational restructuring, global competition, workforce diversity, and work-family life management (International Labour Organisation, 2013). Consequently, these broader societal changes have dramatically redefined the theory and practice of contemporary career management. The traditional assumption, that an individual will occupy a job for a single organization and make steady progress until a definite retirement age, is no longer valid (Arthur & Rousseau, 1996). Individuals are prompted, now more than ever, to build their capacity to thrive on a constantly changing work environment and navigate confidently through ambiguous career structures.

Established notions of career are considerably shifting from linear, stable and predictable trajectories to dynamic and complex patterns of work experiences (Fouad, 2007). Clearly, the rapidly evolving career landscape brings to light the importance of self-direction, flexibility and resilience to change. It places an increasing demand for individuals to be not only efficacious in performing specialized roles but to be also confident in expanding the breadth of their abilities as part of an ongoing career development process (van Vianen, Pater, & Preenen, 2009). Thus, developing an adaptive stance to negotiate transitions and novel demands are inarguably vital for succeeding in today’s work environment.
One of the burgeoning areas of research addressing this issue is career adaptability, the understanding of individual vocational attitudes and behaviors in preparation and response to changing work conditions. Adaptability has been generally regarded in the literature as a key competency that better position individuals as they confront more frequent transitions and less definable prospects throughout the span of their career (Hall, 2004; Lent & Brown, 2013; Savickas et al., 2009). Despite the growing interest in the study of individual adaptability, it has been described as an “elusive concept that has not been well defined in the literature, and therefore, difficult to measure, predict, and teach effectively” (Pulakos et al., 2000, p. 612).

In the career literature, it is only recently that a systematic series of cross-national studies have been conducted to develop a valid measure of career adaptability in line with the conceptualization of career construction theory (Savickas & Porfeli, 2012). Researchers have called for continued validation efforts to fully understand how career adaptability operates, specifically to expand the range of samples and contexts (Porfeli & Savickas, 2012; Savickas, 2013; van Vianen, Klehe, Koen, & Dries, 2012). While current efforts in establishing the internal validity of the career adaptability scale must continue, there is also a need to shift the current focus of empirical investigations to further evaluate the construct validity of career adaptability by testing its interrelationship with other relevant constructs. In sum, the study of career adaptability carries important theoretical and practical implications for understanding self-regulative capacities that enable successful preparation and adjustment to work transitions and changes throughout the span of an individual’s career.

2. Review of Related Research Literature

The succeeding sections present a review of related literature on the conceptualization, measurement, and correlates of career adaptability. This is followed by a literature review synthesis that discusses research gaps. Then an overview,
outlining the purpose and contributions of the current research, is presented. Finally, a
discussion of the organization and linkage of the ensuing three empirical papers1
concludes the chapter.

2.1. Conceptualizing Career Adaptability

Various conceptualizations of individual adaptability have been proposed in the
management and careers literature. As put forward by Schmitt and Chan (2014, p.14),
“clarifying these distinctions and other conceptual issues will enable more adequate
interpretations of empirical findings and contribute to advances in research on
individual adaptability.” Therefore, it is essential to clarify at the onset the aspect of
individual adaptability a research focuses on. Two main streams of research regard
individual adaptability as either performance or dispositional constructs. First,
adaptability as a performance construct emphasizes the can do aspect or skill-based
characteristics that influence behavioral outcomes of work-related adaptation process
(e.g., recognition of cues in DeShon & Rench, 2009; behavioral adaptability in Griffin
& Hesketh, 2003; adaptive performance in Pulakos, Arad, Donovan, & Plamondon,
2000; work coping strategies in Smith, Ford, & Kozlowski, 1997). Second, adaptability
as a dispositional construct focuses on the will do aspect or tendency-based traits that
predict adaptive behaviors (e.g., adaptive traits in Ployhart & Bliese, 2006).

While a variety of definitions have been suggested in the literature, this thesis
focuses on career-specific individual adaptability. Thus, I draw from career construction
theory’s (CCT) conceptualization of adaptability as a psychosocial resource for
preparation and engagement in career-related activities and transitions (Savickas &
Porfeli, 2012). This conceptualization of career adaptability is more in line with the

1 The thesis is a compilation of three empirical papers led by the candidate and
published in the Journal of Vocational Behavior during the doctoral candidature (i.e.,
2013 to 2014).
dispositional stream of research as it focuses on self-regulation strengths that shape adapting behaviors. However, Savickas (2013, p.45) suggests that career adaptability denotes a “set of attitudes, competencies, and behaviors” acting as malleable self-regulation and coping resources rather than as a stable individual disposition. In CCT’s model of career adaptation, *adaptivity* represents the trait component pertaining to individual predisposition or readiness to change. Moreover, it posits that a sequential relationship wherein *adaptivity* prompts the development of *adaptability* resources that shapes *adapting* behavioral responses crucial for attaining *adaptation* outcomes (e.g., career success, life satisfaction, occupational fit). Given that individual adaptability can be conceptualized using different perspectives, it is important to clearly define the conceptual definition and theoretical framework under study. The succeeding section discusses further CCT’s definition of adaptability and its distinction from related career constructs.

2.1.1. Definition

Career adaptability refers to a set of “attitudes, competencies, and behaviors that individuals use in fitting themselves to work that suits them” (Savickas, 2013, p.45). It is conceptualized as a psychosocial construct that focuses on the interface between individuals and their environment. Therefore, career adaptability is expected to be shaped by an individual’s life roles and contextual contingencies. Moreover, it is considered as transactional competencies since it enable individuals to manage recursive transactions between their vocational self-concept and changing work roles throughout the span of their career. Thus, career adaptability is also viewed as a human capital that can be developed as a result of accrued knowledge and experiences. Finally, career adaptability is regarded as an aggregate construct representing self-regulation strengths characterized by concern, curiosity, control, and confidence.
According to career construction theory, career adaptability resources are modeled as multidimensional and hierarchical construct, with global adaptability comprising a first-order level and the four resources (i.e., 4Cs namely concern, control, curiosity, and confidence) at the second-order level of the hierarchy. Specifically, career concern pertains to a time perspective towards preparation for the future such as developing a career vision. A lack of concern results in career indifference characterized by absence of career plans and a negative future orientation. Second, career control indicates a sense of ownership and responsibility to exert influence on one’s career. Deficits in control result in career indecision characterized by inability to assert or make career choices. Thirdly, career curiosity refers to interest in exploring possible selves and opportunities in one’s environment. A lack of curiosity leads to inaccurate perceptions of oneself and occupations. Lastly, career confidence pertains to the pursuit of aspirations and anticipation of success in face of obstacles. Lack of confidence therefore results in career inhibitions characterized by inability to cope with barriers. These self-regulation resources are implemented by adaptive individuals to regulate career behaviors and to manage current and imminent occupational tasks and transitions (Savickas & Porfeli, 2012).

2.1.2. **Comparison with Related Constructs**

The career construction concept of adaptability is distinct from other conceptualizations of individual adaptability in several ways. First, career adaptability is viewed as a key competency similar to the protean concept. The protean career concept describes a flexible and self-directed attitude aimed at mobilizing a psychologically meaningful career, where adaptability is regarded as a meta-competency for skill acquisition (Hall, 2002). Whereas protean career orientation (Hall & Moss, 1999) describes an adaptive attitude towards changing psychological contracts (i.e., perceived obligations between individuals and organization in Rousseau, 1989; Robinson, Kraatz,
between employees and their organizations, career adaptability focuses on the actual competencies or self-regulation resources individuals demonstrate to manage these changes (Savickas, 1997). Second, career adaptability is domain-specific and concentrates on negotiating career-related changes, as opposed to broader and global approaches of work adaptability (e.g., adaptive performance in Pulakos et al., 2000). Career adaptability mainly addresses individual resources for preparation and participation in their work role as well as subsequent readiness for coping with transitions between occupational positions throughout the span of their career (Savickas & Porfeli, 2012). Third, career adaptability is conceptualized as a psychosocial and transactional resource. Its development, activation, and expression are relative to the changing nature of the individual and his/her context. In comparison with the individual difference approach (e.g., adaptive traits in Ployhart & Bliese, 2006), career adaptability is regarded to be malleable and more proximal to career adjustment and success (Savickas & Porfeli, 2012). Fourth, career adaptability involves both reactive and proactive coping approaches to negotiate current and imminent work demands. This proactive aspect of career adaptability distinguishes it from similar constructs such as career resilience defined as “the ability to adapt to change, even when the circumstances are discouraging or disruptive” (London, 1997, p. 34). Whereas, resilience pertains to overcoming change once it has occurred, adaptability emphasizes a proactive component (e.g., anticipation and preparation) in addition to coping with novel career demands. Finally, career adaptability assumes a life-span approach and is primarily interested in the individual’s dynamic career development and engagement across life stages.

2.2. Overview of Career Construction Theory

The career construction theory evolved from Super’s (1953, 1980) developmental theory of vocational choice. This major theoretical perspective is
considered to be the most comprehensive and influential guiding framework in vocational psychology research (Hackett, Lent, & Greenhaus, 1991). Specifically, the developmental perspective views career development as a process of vocational self-concept (i.e., self-perceived attributes relevant to work roles) implementation to achieve occupational fit and life satisfaction. It also regards development as a dynamic process across five career stages characterized by growth, exploration, establishment, maintenance, and disengagement (Super, 1953).

Despite its long prominence in careers research, the vocational development theory (i.e., life-span, life-space theory; Super, 1980) is not without limitations. Its view of careers as a linear movement from one stable condition to another is no longer congruent with current patterns of work characterized to be unpredictable, mobile, and boundaryless (Arthur & Rousseau, 1996). Furthermore, it focused heavily on career maturity (i.e., early career choice readiness) and did not feature an organizing construct that also accounts for the constant adjustment confronting working adults (Savickas, 1997). The central concept of career maturity is relevant to a stable career environment, where an individual could implement a career choice and develop securely. However, planning a steady course on a stable career path is no longer valid in today’s fast-evolving work environment.

Thus, the career construction theory emerged from an initiative to integrate the segments (e.g., individual differences, development, self-concept, and context) of Super’s (1980) life-span, life-space theory in order to address the current changing nature of individual work patterns and experiences. Aligned with the developmental approach, career construction theory likewise focuses on the implementation of the vocational self-concept across life stages as well as individual readiness to fulfill age-appropriate career tasks. It takes on a contextualist worldview which primarily views
career development as driven by adaptation to one’s work environment rather than by choice maturation (Savickas, 1997; 2002).

To fill in the gaps of vocational development theory, the concept of career adaptability was developed to account for career decisions that working individuals must make as they cope with changing work conditions. It functions as a bridging construct that integrates segments of Super’s (1980) theory into a unifying core construct that responds to the advances in developmental and vocational psychology research. Therefore, the theory of career construction provides a dynamic perspective of career development driven by adaptation to a constantly changing environment.

Lastly, career construction theory focuses on the process of person-environment fit. It draws from the social constructivist paradigm, which regards career development as a dynamic and active process of meaning making, to address the exclusive focus of dominant trait-oriented career theories on individual difference analysis and occupation matching (Young & Collin, 2004). This oversight of traditional career theories is addressed by integrating the influence of person-environment interaction on career development. Individuals are then viewed as self-regulating agents creating choices and determining their vocational identity to achieve integration with their social environment (Savickas, 2013). Therefore, the theory of career construction responds to the current restructuring of the work context by emphasizing flexibility and self-directed career mobility.

2.3. The Career Construction Model of Adaptation

Within the career literature, the career construction model of adaptation also builds on the boundaryless (i.e., restructuring of careers in Arthur & Rousseau, 2001) and protean (i.e., adaptive attitude in Hall, 2002) concepts by explicating the psychological resources necessary to manage and cope successfully in an evolving
career landscape. Altogether, these contemporary concepts highlight the vital role of the individual in directing development and career sense-making. The career construction model of adaptation focuses on the process of an individual’s social integration as they prepare, enter, and participate in their work roles. Recognizing the prominence of uncertainty in today’s work environment, it also takes into account the individual readiness and resources for coping with anticipated transitions as well as unanticipated occupational changes that may occur throughout the span of their career. This process of adaptation involves an interplay across elements of adaptive readiness, adaptability resources, adapting responses, and adaptation results.

Savickas (2013) suggests that individuals may vary in their readiness to confront change, differ in their resources to manage change, demonstrate varying degrees of adjustment when change is needed, and as a result become differently integrated into work roles over time. Variations in individual adaptation are influenced by the opportunities and imperatives presented in their environment, specifically cultural or contextual factors are posited to place boundary conditions in the activation and expression of career adaptability. Hence, the elements of adaptation are expected to be relative to the changing nature of the individual and the corresponding environment.

It is important to distinguish clearly between the key elements of adaptation posited by Savickas’ (1997; 2013) theory of career construction. Figure 1 illustrates the career construction model of adaptation and relationship between its different components. First, adaptivity is the individual difference component pertaining to readiness to change and demonstrate adapting behaviors. Adaptive readiness by itself cannot prompt behaviors necessary for work adjustment. To attain fit, adaptive individuals bring in self-regulation capacities together with their willingness to confront change. These resources for coping and enacting change are denoted by adaptability. As
Figure 1. The Career Construction Model of Adaptation
<table>
<thead>
<tr>
<th>Country</th>
<th>Sample</th>
<th>CAAS Version</th>
<th>Study Variables</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia*</td>
<td>N = 555 university students</td>
<td>CAAS – English</td>
<td>Learning Goal Orientation, Proactive Personality, &amp; Career Optimism (Convergent Validity)</td>
<td>Tolentino, Garcia, Lu, Restubog, Bordia, &amp; Plewa, 2014</td>
</tr>
<tr>
<td></td>
<td>N = 659 employed adults</td>
<td>CAAS – English</td>
<td>Big 5 personality factors, Core self-evaluations, and Temporal Focus (Incremental Validity)</td>
<td>Zacher, 2014b</td>
</tr>
<tr>
<td></td>
<td>N = 1723 employed adults</td>
<td>CAAS – English</td>
<td>Big 5 personality factors, Core self-evaluations, Career Performance (Incremental Validity)</td>
<td>Zacher, 2014a</td>
</tr>
<tr>
<td>Belgium</td>
<td>N = 700 high school, college, &amp; university students</td>
<td>CAAS – Dutch</td>
<td></td>
<td>Dries, Van Esbroeck, Van Vianen, De Cooman, &amp; Pepermans, 2012</td>
</tr>
<tr>
<td>Brazil</td>
<td>N = 908 university students, unemployed and employed adults</td>
<td>CAAS – Portuguese</td>
<td>Big 5 Personality Factors (Concurrent Validity)</td>
<td>Texeira, Bardagi, Lassance, Magalhaes, &amp; Duarte, 2012</td>
</tr>
<tr>
<td>China</td>
<td>N = 296 university students</td>
<td>CAAS – Chinese</td>
<td></td>
<td>Hou, Leung, Li, Li, &amp; Xu (2012)</td>
</tr>
<tr>
<td>Country</td>
<td>N</td>
<td>Measure</td>
<td>Scale</td>
<td>References</td>
</tr>
<tr>
<td>-------------------------</td>
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<td>------------------------------------------------</td>
</tr>
<tr>
<td>France</td>
<td>N = 609</td>
<td>11th grade students</td>
<td>CAAS – French</td>
<td>Pouyaud, Vignoli, Dosnon, &amp; Lallemand, 2012</td>
</tr>
<tr>
<td></td>
<td>N = 395</td>
<td>Belgian employed adults</td>
<td>CAAS – French</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N = 663</td>
<td>French employed adults</td>
<td>CAAS – French</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N = 181</td>
<td>Luxembourgish employed adults</td>
<td>CAAS – French</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>N = 1204</td>
<td>employed adults</td>
<td>CAAS – German</td>
<td>Johnston, Luciano, Maggiori, Ruch, &amp; Rossier, 2013</td>
</tr>
<tr>
<td>Iceland</td>
<td>N = 1740</td>
<td>9th-10th grade students</td>
<td>CAAS – Icelandic</td>
<td>Vilhjalmbsdottir, Kjartansdottir, Smaradottir, &amp; Einardottir, 2012</td>
</tr>
<tr>
<td>Italy</td>
<td>N = 762</td>
<td>adolescents</td>
<td>CAAS – Italian</td>
<td>Soresi, Nota, &amp; Ferrari, 2012</td>
</tr>
<tr>
<td>Country</td>
<td>Sample Size</td>
<td>Language/Region</td>
<td>Measure/Variables</td>
<td>Authors/Date</td>
</tr>
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</tr>
<tr>
<td>Japan</td>
<td></td>
<td>CAAS - Japanese</td>
<td>Life (Concurrent Validity)</td>
<td>in Savickas &amp; Porfeli, 2012</td>
</tr>
<tr>
<td>Korea</td>
<td>N = 278</td>
<td>CAAS - Korean</td>
<td></td>
<td>Tak, 2012</td>
</tr>
<tr>
<td>Netherlands</td>
<td>N = 465</td>
<td>CAAS - Dutch</td>
<td>Big 5 personality factors, Self-esteem, Regulatory focus (Convergent Validity), and General mental ability (Discriminant Validity)</td>
<td>Van Vianen, Klehe, Koen, &amp; Dries, 2012</td>
</tr>
<tr>
<td></td>
<td>N = 395</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N = 266</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Country</td>
<td>Sample Details</td>
<td>Language</td>
<td>Measures</td>
<td>Authors, Year</td>
</tr>
<tr>
<td>---------</td>
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<td>--------------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>South Africa</td>
<td>N = 435 high school students</td>
<td>CAAS - English</td>
<td></td>
<td>Maree, 2012</td>
</tr>
<tr>
<td>Switzerland</td>
<td>N = 391 employed adults</td>
<td>CAAS – French</td>
<td>Big 5 personality factors and Work engagement (Predictive Validity)</td>
<td>Rossier, Zecca, Stauffer, Maggiori, &amp; Dauwalder, 2012</td>
</tr>
<tr>
<td>Taiwan</td>
<td>N = 493 student and employed adults</td>
<td>CAAS - Taiwanese</td>
<td></td>
<td>Tien, Wang, Chu, &amp; Huang, 2012</td>
</tr>
<tr>
<td>Turkey</td>
<td>N = 332 university students</td>
<td>CAAS – Turkish</td>
<td>Self-esteem, General Self-efficacy, Neuroticism, Internal Locus of Control, Proactive Personality, Future Time Perspective, Core Self-Evaluations, and GPA Grade (Convergent Validity)</td>
<td>Oncel, 2014</td>
</tr>
<tr>
<td>USA</td>
<td>N = 460 10th and 11th grade students</td>
<td>CAAS – English</td>
<td>Vocational Identity Status (Concurrent Validity)</td>
<td>Porfeli &amp; Savickas, 2012</td>
</tr>
</tbody>
</table>

*Published papers included and reported in the PhD thesis.*
discussed in the earlier sections, career adaptability comprises self-regulatory strengths characterized by concern, control, curiosity, and confidence. As the focal construct in the model, career adaptability is viewed to fill in the gap between individual intention (i.e., adaptive readiness) and action (i.e., adapting responses). Career adaptability is expected to shape the manner of adapting responses or vocational behaviors to manage change. These elements are crucial for attaining adaptation results, referred to as goodness of fit indicated by career success, satisfaction, and development (Savickas & Porfeli, 2012). In sum, the career construction model suggests that higher levels of adaptation are expected for those who demonstrate readiness and ability to enact behaviors that adequately address changing work conditions.

The following section presents a review of the relevant empirical evidence concerning the measurement, generalizability, and validity of career adaptability. The review is inclusive of the research literature published across 2005 to 2014, ranging from the earliest to the most recent empirical investigations of career adaptability based on CCT’s conceptualization. To situate the current research, the review that has been undertaken covers the empirical investigations before and immediately after (e.g., October to December 2014) the three empirical papers reported in this thesis were published.

2.4. Measurement of Career Adaptability: The Career Adapt-Abilities Scale

The Career Adapt-Abilities Scale (CAAS) International form is a 24-item instrument designed to measure the psychosocial construct of career adaptability in different countries. Each of the four subscales has six items which measure the adaptability resources of concern, control, curiosity, and confidence. Together, the total score in CAAS yield global career adaptability. Career adaptability is modeled as a multidimensional and hierarchical construct, where the first-order level consists of a multidimensional matrix of career resources (e.g., concern, control, curiosity, and
confidence) that combine at the second-order level to become a global indicator of adaptability (Savickas & Porfeli, 2012). To test its cross-country measurement equivalence, a series of international validation studies were initiated subsequent to scale development. Table 1 summarizes the cross-country validation studies of the Career Adapt-Abilities Scale.

2.4.1 Cross-country Measurement Equivalence

The CAAS was developed to address the gap in the measurement of the career adaptability construct. Prior to its development, research on career adaptability utilized proxy measures (e.g., career optimism, Rottinghaus et al., 2005; proactive personality, Bateman & Crants, 1993; boundaryless mindset, Briscoe et al., 2006; commitment to career choices and confidence Duffy & Blustein, 2005; career confidence, Ellis & Taylor, 1983; career decision-making, Germejis & DeBoeck, 2003; career planning, Gould, 1979; career motivation, London, 1993; career exploration, Stumpf et al., 1983) to determine the adaptability dimensions of concern, control, curiosity, and confidence. The measurement approach applied in these studies did not accurately account for the aggregate construct of career adaptability as conceptualized by the theory of career construction. In general, previous studies vary widely in their operationalization and measurement practice of career adaptability (Duffy & Blustein, 2005, Duffy, 2010, Duarte, 1995, Creed et al., 2009, Hirschi, 2009, Ito & Brotheridge, 2005, Klehe et al., 2011, Koen et al., 2010, McArdle et al., 2007), thus it was cumbersome to compare evidences that could clarify the career construction model of adaptation. These conceptualization and measurement inconsistencies are a critical deterrent to the advancement of career adaptability research.

In response to this measurement gap, an international team of vocational psychologists developed a scale using career construction as a guiding framework. To date, the CAAS International Form 2.0 was translated into eleven languages (e.g.,
Chinese, Dutch, French, German, Icelandic, Italian, Korean, Lithuanian, Portuguese, Taiwanese, and Turkish). Its multidimensional and hierarchical measurement model has been validated across 23 countries (e.g., Australia in Tolentino et al., 2014, Zacher, 2014a, and Zacher, 2014b; Belgium in Dries, van Esbroeck, van Vianen, De Cooman, & Pepermans, 2012; Brazil in Teixeira, Bardagi, Lassance, Magalhaes, & Duarte, 2012; China in Hou, Leung, Li, Li, & Xu, 2012; France in Pouyaud, Vignoli, Dosnon, & Lallemand, 2012; Francophone countries in Johnston et al., 2013; Germany in Johnston, Luciano, Maggiori, Ruch, & Rossier, 2013; Iceland in Vilhjalmsdottir, Kjartansdottir, Smaradottir, & Einarsdottir, 2012; Italy in Soresi, Nota, & Ferrari, 2012; Japan, Watanabe cited in Savickas & Porfeli, 2012; Korea in Tak, 2012; Lithuania in Urbanaviciute, Kairys, Pociute, & Liniauskaite, 2014; Macau in Tien, Lin, Hsieh, & Jin, 2014; Netherlands in van Vianen, Klehe, Koen, & Dries, 2012; Papua New Guinea in de Guzman & Ok, 2013; Philippines in Tolentino, Garcia, Restubog, Bordia & Tang, 2013; Portugal in Duarte et al., 2012; Serbia in Tolentino, Sedoglavich, Lu, Garcia, & Restubog, 2014; South Africa in Maree, 2012; Switzerland in Rossier, Zecca, Stauffer, Maggiori, & Dauwalder, 2012; Taiwan in Tien, Wang, Chu, & Huang, 2012; Turkey in Oncel, 2014; USA in Savickas & Porfeli, 2012). The psychometric properties reported in these studies conform to the linguistic explication and multidimensional, hierarchical model of career adaptability. Overall, the cross-country validation studies provide robust evidence for the measurement equivalence and utility of CAAS in different contexts.

2.4.2. Construct Validity Evidence

As shown in Table 1, current validation studies have also examined the convergent, discriminant, and incremental validity of the career adaptability construct. Corresponding with its conceptualization, it was found to be positively related to personality traits (e.g., conscientiousness, openness to experience, extraversion,
agreeableness, core self-evaluation, proactive personality in Rossier et al., 2012; Oncel, 2014; Teixeira et al., 2012; Tolentino et al., 2014; Zacher, 2014b), positive dispositions (e.g., career optimism, self-esteem, self-efficacy, orientation to happiness in Johnston, Luciano, Maggiori, Ruch, & Rossier, 2013; Oncel, 2014; Tolentino et al., 2014; Van Vianen, Klehe, Koen, & Dries, 2012), coping approaches (e.g., tenacious goal pursuit and flexible goal adjustment in Tolentino, Garcia, Restubog, Bordia, & Tang, 2013), and motivational states (e.g., promotion-focused self-regulation, learning goal orientation, need for achievement, future time perspective, locus of control in Oncel, 2014; Pouyaud, Vignoli, Dosnon, & Lallemand, 2012, Tolentino et al., 2014; Van Vianen, Klehe, Koen, & Dries, 2012; Zacher, 2014b). Positive relationships between career adaptability and desirable work outcomes (e.g., employability, professional competence, work engagement, lesser work stress, career success, and better quality of life in de Guzman & Choi, 2013; Guan et al., 2014; Johnston et al., 201; Rossier et al., 2012; Soresi et al., 2012; Tolentino et al., 2013; Zacher, 2014a) were also supported. Moreover, career adaptability predicts career success outcomes over and above Big 5 personality factors and core self-evaluation measures suggesting incremental validity evidence and distinguishing it from related constructs (Zacher, 2014a).

Conversely, career adaptability was found to be negatively associated with neuroticism (Teixeira et al., 2012), prevention-focused self-regulation (van Vianen et al., 2012), trait anxiety, fear of failing (Pouyaud, Vignoli, Dosnon, and Lallemand, 2012), and perceived internal and external barriers (Soresi, Nota, & Ferrari, 2012). Taken together, these findings also provide robust validity evidence for the career construction conceptualization of adaptability as unique career development resource.
2.5. Antecedents of Career Adaptability

Preliminary studies on career adaptability primarily investigated various dispositional and situational predictors in the school-to-work transition context. Positive associations were found between career adaptability and goal orientation (Creed et al., 2009), goal decidedness, positive emotional disposition, social context beliefs (Hirschi, 2009), spirituality, religiousness (Duffy & Blustein, 2005), career optimism, self-esteem, and social support among students (Duffy, 2010). These findings show that a confident, goal-focused, and positive predisposition relates to higher career adaptability in the school context. Among working individuals, previous studies found career adaptability to be positively related to career concerns, values, role salience (Duarte, 1995), participation in decision making, autonomy, and supervisory support (Ito & Brotheridge, 2005; McArdle et al., 2007).

On the contrary, it was found to be negatively associated with job redundancy, job dissatisfaction and job insecurity (Klehe et al., 2011). These threatening job factors drive working individuals to strengthen their personal agency and explore career options thereby increasing career adaptability. As outlined in the earlier sections of this paper, these pre-CAAS studies used varying operationalization of career adaptability. For instance, career adaptability was conceptualized as a set of adaptive behaviors in the form of engagement in career development activities and career resilience in the work context (Ito & Brotheridge, 2005).

Following the development of the career adaptability measure, personality factors have been identified in subsequent investigations as antecedents of career adaptability. For instance, higher levels of career adaptability were found to be associated with promotion regulatory focus and high extroversion, conscientiousness, and openness to experience among a sample of university students and working adults (Rossier, et al., 2012; van Vianen et al., 2012). These preliminary empirical evidences
substantiate the assumption that career adaptability resources strongly relate to stable individual dispositions that reflect a sense of adaptive readiness to confront change.

To date, studies that examined predictors of career adaptability using the CAAS measure are recently emerging. As shown in Figure 2, these studies found that career adaptability is positively influenced by *personality factors* (e.g., extraversion, conscientiousness, openness to experience), *promotion regulatory focus*, *self-esteem* (van Vianen et al., 2012), *coping approaches* (e.g., tenacious goal pursuit and flexible goal adjustment; Tolentino et al., 2013), *emotional intelligence* (Coetzee & Harry, 2014), *motivational states* (learning goal orientation, proactive personality, and career optimism; Tolentino et al., 2014a), *future temporal focus* (Zacher, 2014b), and *positive emotional dispositions* (Guan et al., 2014; Maggiori et al., 2013; Tian & Fan, 2014; Wilkins et al., 2014).

Conversely, a negative relation was found between career adaptability and prevention-focused regulation (van Vianen et al., 2012), job strain (Maggiori et al., 2013), perceived control of adversity (Tian & Fan, 2014). In addition to these individual differences, recent empirical work has also demonstrated the positive role of environmental conditions, such as social support and learning environment, in the development of career adaptability (Tian & Fan, 2014). These findings support the conceptualization of career adaptability as a malleable psychosocial resource. It also supports the career construction model suggesting that adaptivity fosters adaptability resources.

2.6. Consequences of Career Adaptability

Beyond identifying this range of predictors, empirical research has also examined a number of outcomes associated with career adaptability. In the school context, students who have higher career adaptability reported lesser career concerns (Creed et al., 2009) and adolescents with higher levels of career adaptability were found
to have higher sense of power and life satisfaction (Hirshi, 2009). Furthermore, investigation of outcomes in the work context suggest that career adaptable workers who experienced negative job conditions (e.g., redundancy) were more likely to exit because they are less dependent to the organization and are able to explore work options (Klehe et al., 2011). In addition, career adaptable individuals who were unemployed were more likely to attain re-employment (Koen et al., 2010). This positive link between career adaptability and re-employment is further strengthened by self-esteem and job search strategy (McArdle et al., 2007).

Empirical studies using CAAS suggest that training adaptability resources enabled students to transition easier from school-to-work as evidenced by overall employment quality, characterized by higher job satisfaction, career satisfaction, perceived person-organization fit, and lower turnover intentions (Koen, Klehe, & van Vianen, 2012). This particular empirical evidence does not only demonstrate the enabling role of career adaptability resources, but it also provides insight regarding the malleability of adaptive capacities. In addition, career adaptability was found to be associated with higher levels of work engagement among a sample of working adults (Rossier et al., 2012). These empirical evidences support the career construction assumption that adaptability resources facilitate both successful entry and participation in work roles.

More recent studies similarly demonstrate that career adaptability is associated with higher professional competence (Guo et al., 2014), better job pre-entry fit perceptions (Guan et al., 2013), and successful employment (Guan et. al., 2014) among university students transitioning to work. Furthermore, these recent investigations found that calling (Guo et al., 2014) and job search self-efficacy (Guan et al., 2013) act as intervening variables between career adaptability and school-to-work transition link.
**Person / Individual Difference Predictors**

- Big 5 Personality Traits: Extraversion, Conscientiousness, Openness to Experience (+)
- Regulatory Focus: Promotion Regulatory Focus (+), Prevention Regulatory Focus (-)
- Self-esteem (+) (Van vianen, Klehe, Koen, & Dries, 2012)
- Coping approaches: Tenacious goal pursuit and flexible goal adjustment (+) (Tolentino et al., 2013)
- Job insecurity and Job strain (-) (Maggiori et al., 2013)
- Emotional intelligence (+) (Coetzee & Harry, 2014)
- Learning goal orientation, proactive personality, and career optimism (Tolentino et al., 2014)
- Future temporal focus (+) (Zacher, 2014b)
- Control of Adversity Quotient (+) (Tian & Fan, 2014)
- Hardiness (+) (Coetzee & Harry, 2014)
- Future Work Self (+) (Guan et al., 2014)
- Positive emotional dispositions: Hope and Optimism (+) (Wilkins et al., 2014)

**Environmental / Contextual Predictors**

- Social support (+)
- Individualized Clinical Learning Environment (+) (Tian & Fan, 2014)

**Career adaptability**
(measured using CAAS; Savickas & Porfeli, 2012)

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**Figure 2.** Conceptual map of the antecedents of career adaptability
The influence of career adaptability on professional competence was also found to be stronger in a career-oriented learning environment (Guo et al., 2014).

In the context of entrepreneurial career, adaptability was found to also positively influence the formation of entrepreneurial intent via entrepreneurial self-efficacy for university students with prior exposure to family business (Tolentino et al., 2014). Therefore, the proposition that career adaptation is shaped by contextual boundary conditions is supported in these studies (Guo et al., 2014; Tolentino et al., 2014) where learning environments was shown to strengthen the influence of career adaptability. These recent investigations also underscore the intervening role of efficacious beliefs in career adaptation. The inclusion of mediating and moderating variables in these recent investigations expands our understanding of adaptation in early career development.

Among a sample of working adults, career adaptability was found to reduce work stress (Maggiori et al., 2013) and promote general and professional well-being (Santilli et al., 2014; Wilkins et al., 2014). The link between adaptability and well-being is partially mediated by the individual’s hope (Santilli et al., 2014). This particular empirical evidence provides insight regarding the role of positive motivational states as an underlying psychological mechanism for the link between career adaptability and life adjustment. Aside from general well-being outcomes, empirical evidence demonstrates the positive influence of adaptability on career-specific and proximal indicators of success among employed adults (e.g., career satisfaction and promotability in Tolentino et al., 2014; Zacher, 2014a). Overall, these research findings, summarized in Figure 3 substantiate the vital role of career adaptability resources in facilitating successful adjustment.

2.7. Career Adaptability as a Mediating and Moderating Variable

At present, various empirical investigations also attempt to advance career adaptability research by examining its role as a mediator or moderator in the process of
career adaptation. For instance, career adaptability was found to mediate the relationship between future work self and employment status (Guan et al., 2014). This is coherent with previous empirical findings indicating the key role of career adaptability in enabling vocational development (e.g., school-to-work transition and work-to-work transition; Guan et al., 2013, Koen, Klehe, Van Vianen, Zikic, Nauta, 2010; Koen, Klehe, & Van Vianen, 2012).

As presented in Figure 4, the research conducted by Guan and colleagues (2014) also investigated the moderating role of career adaptability. Specifically, the positive influence of future work self on job search self-efficacy were further enhanced for individuals with stronger career adaptability; those who are highly adaptable perceived themselves to be more efficacious in job seeking. In addition, the indirect effect of future work self on employment status via job search efficacy was also stronger for university graduates with higher levels of career adaptability. The interaction found between future work self and career adaptability in predicting job search self-efficacy supports the proposition that career adaptation results from both willingness and ability to adapt.

Furthermore, other investigations found that the ability to prepare for and cope with career circumstances mediates the relationship between Big 5 personality traits and work engagement, thereby suggesting career adaptability’s contributing role to the regulation of personality expression (Rossier, Zecca, Stauffer, Maggiori, & Dauwalder, 2012). Related studies on work outcomes also indicate the mediating effect of career adaptability in the negative relationship between orientation to happiness and work stress (Johnston, Luciano, Maggiori, Ruch, & Rossier, 2013) as well as between work conditions (e.g., job strain and insecurity) and well-being (e.g., professional and general; Maggiori, Johnston, Krings, Massoudi, & Rossier, 2013). The latter study
Figure 3. Conceptual map of the consequences of career adaptability with mediator and moderator variables.
shows that career adaptability also acts as a pathway between environmental factors and work outcomes.

The positive relationship between emotional dispositions and life satisfaction (e.g., hope and optimism; Santilli, Nota, Ginevra, & Soresi, 2014; Wilkins et al., 2014) were also found to be mediated by career adaptability. These findings suggest that career adaptability resources, as a more proximal construct to adaptation outcomes, act as the underlying psychological mechanism through which individuals attain fit and satisfaction with their desired personal and professional life. Figure 5 summarizes prior studies that tested the role of career adaptability as a mediating variable.

3. Literature Review Synthesis

The current literature review reveals promising conceptual, measurement, and empirical developments in the study of career adaptability. More recent research provided a useful roadmap for examining the measurement and nature of career adaptability (e.g., Savickas & Porfeli, 2012; Rossier et al., 2012; van Vianen et al., 2012, Guan et al., 2014). It also addressed the oversight and inconsistent operationalization of career adaptability in earlier studies. Research conducted to date substantiates the enabling role of adaptability in effective career management. At the same time, it opens an opportunity for the continued advancement of our knowledge about career adaptation across life stages, type of careers, and cultural contexts.

As an emerging area of research, a number of gaps in knowledge still need to be addressed to broaden our understanding of career adaptability. Firstly, current CAAS international research implemented their validation studies in mostly Western countries and developed economies. We know less about how career adaptability is developed

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2 The research gaps discussed in this section pertain to the limitations of existing empirical career adaptability research (e.g., 2005 to early 2012) during the conceptualization of the empirical papers included in this thesis.
Figure 4. Conceptual map of career adaptability as a moderator variable.
Figure 5. Conceptual map of career adaptability as mediator variable.
and expressed in non-Western and developing countries where individuals likely confront higher levels of career uncertainty and insecurity. Examining career adaptability in developing countries can contribute to our better understanding of its psychosocial nature, particularly how it is shaped by unique career opportunities and impediments presented in these contexts.

Secondly, there is considerable research opportunity for elaborating the nomological network, as well as expanding the generalizability of career adaptability, to understand how it operates in various life stages. Prior research has predominantly examined a limited range of correlates, mainly to establish convergent validity evidence of the adaptability scale using a sample of adolescents (De Guzman & Ok, 2013; Porfeli & Savickas, 2012; Pouyaud, Vignoli, Dosnon, & Lallemand, 2012; Teixeira et al., 2012). With the exception of selected few (Koen, Klehe, & van Vianen, 2012; Rossier, Zecca, Stauffer, Maggiori, & Dauwalder, 2012; van Vianen, Klehe, Koen, & Dries, 2012), studies to date focused on studying general outcomes of career adaptability (e.g., well-being in Maggiori et al., 2013) rather than providing evidence for its influence on a range of more career-specific (e.g., career satisfaction, commitment) and objective criteria (e.g., promotion, job performance, reemployment) of fit and success.

Thirdly, prior research focused on adaptability in organizational careers despite the concept’s utility in alternative career pathways such as self-employment and entrepreneurship, where success primarily hinges on a high degree of self-direction and flexibility. In view of this, we argue that career adaptability serves as a useful human capital for entrepreneurs because it enables effective self-management in novel situations and volatile business contexts. Correspondingly, there is a call in entrepreneurship research to move forward from its trait-focused approach and take into account other malleable person factors to explicate the complex nuances in the career development of enterprising individuals (Rauch & Frese, 2007; Unger, Rauch, Frese, &
Rosenbusch, 2011; Zacher, Biemann, Gielnik, & Frese, 2012). Indeed, entrepreneurship is not an occupation that individuals are simply predisposed to, hence, examining career adaptability may enhance our understanding entrepreneurial attitudes and behaviors.

Furthermore, research to date has not yet fully examined the underlying psychological mechanisms by which adaptive traits and resources result in successful career adaptation. There is also scarce empirical evidence that elucidates boundary conditions that interact with this process. As a malleable psychosocial resource, career adaptability is expected to be strongly influenced by life roles and contextual contingencies (Savickas & Porfeli, 2012). In line with this reasoning, further research needs to examine intervening variables that translate personal and situational characteristics to desired adaptation outcomes, including how this link is either strengthened or mitigated by moderating variables. By doing so, we illuminate individual differences and situational factors that may prompt or hinder adaptability resources, thus obtain a better understanding of the career adaptation.

Lastly, the theory of career construction (Savickas 1997; 2013) suggests that adaptation results from a sequence of adaptive readiness, adaptability resources, and adapting strategies. This sequential relationship between elements of the model of career adaptation has remained unexamined by previous studies. Specifically, the current literature has taken a piecemeal approach and largely overlooked the investigation of the overall process of career adaptation in varying contexts. It is put forward in this thesis that prior research has not provided an extant model that adequately explains the factors influencing the process of career adaptation. In order to address this gap, succeeding empirical investigations need to test the link between these concepts in order to clarify successful adaptation as posited by career construction theory.
In light of this, the present research aims to address these gaps in the literature in several ways. We begin by examining the relationship between the first two components of the career construction model of adaptation, specifically whether adaptivity predicts career adaptability. Adaptivity was operationalized using trait-like variables indicating flexibility and openness to change (e.g., learning goal orientation, proactive personality, career optimism). Next, we turn to examining the outcomes of career adaptability in entrepreneurship by testing a moderated mediation model, where entrepreneurial self-efficacy acts as the explanatory variable mediating the relationship between career adaptability and entrepreneurial intentions while prior exposure to family business serves as a moderating variable. Following this, we then test the overall model of career adaptation and demonstrate that adaptability resources act as a critical underlying mechanism mediating the relationship between adaptivity (e.g., tenacious goal pursuit and flexible goal adjustment) and adaptation outcomes (e.g., career satisfaction and promotability).

4. **Overview of the Program of Research**

A career pertains to a pattern or sequence of work roles and experiences over the life course (Arthur, Inkson, & Pringle, 1999; Hall, 1996). In line with this perspective, we therefore regard individuals across life stages who are engaged in work-related pursuits and activities as having a career, in contrast with restrictive conditions equating career with high levels of occupational status, commitment, upward mobility, and stability (e.g., careerism in Feldman, 1985). We then draw from developmental and constructivist perspectives to understand the psychological resources that regulate the process of career adaptation. Specifically, the theory of career construction provides a guiding framework that is responsive to the changing nature of the current work environment. It views individuals as self-organizing, self-regulating, and self-defining agents rather than static entities (Savickas, 2013). Therefore, individuals have the
capacity to mobilize their development and respond to changing work conditions by
enacting their adaptability resources (i.e., concern, control, curiosity, and confidence).
These self-regulatory resources guide career sense-making and shape the expression of
adapting behaviors crucial for attaining fit between the occupational self-concept and
environment (Savickas, 1997).

In view of this, the purpose of the present research is to examine the process of
individual career adaptation, with adaptability resources as the focal aspect under
investigation. This research program primarily aims to broaden our understanding of
career adaptability by examining its relationship with the other elements of the career
construction model. The model states that higher levels of adaptation outcomes are
expected for those who demonstrate readiness (adaptivity) and ability (adaptability) to
perform behaviors that address changing work conditions (Savickas & Porfeli, 2012).
Specifically, this research examines the role of adaptability as the underlying
psychological mechanism that links adaptive dispositions and career outcomes.
Applying the theoretical framework of career construction (Savickas, 1997; 2013), three
empirical studies examined the measurement and construct validity of career
adaptability across a sample of university students and employees from developed and
developing countries. The full research model is presented in Figure 6.

Paper 1 examines the dispositional predictors of adaptability (e.g., learning goal
orientation, proactive personality, and career optimism) based the theoretical assertion
that individuals who are predisposed to be more willing to change their behaviors would
develop better adaptability resources to respond effectively to their career circumstances
(e.g., school-to-work transition). By examining these relationships, we clarify the
individual difference component of the CCT career adaptation model as well as specify
the direction of the path between adaptivity and adaptability.
Paper 2 applies the CCT model of adaptation to explain career choice formation in entrepreneurship. We argue that career adaptable individuals draw from their self-regulation resources to enact agentic behaviors vital in business settings, such as forming an entrepreneurial intention. This relationship is explained by high levels of entrepreneurial self-efficacy, which facilitates the formation of positive self-perceptions in relation to potential success in business ventures. Furthermore, entrepreneurial self-efficacy is strengthened under favorable environmental conditions such as having prior exposure to a family business because it provides access to human capital and social resources that informs enterprising individuals’ perceived competence in business ownership.

Paper 3 tests the relationship of career adaptability with other components of the CCT model and specifies the direction of relationship based on the proposed sequence between adaptive readiness, adaptability resources, and adaptation results. We argue that coping tendencies motivate willingness to change that prompts the development of adaptability resources which in turn is associated with high career satisfaction and promotability. Individuals who are willing and able to adapt are more likely to generate options and fit into new circumstances which are essential to achieving career success.

The present research contributes to the literature in several important ways. Firstly, this research advances our understanding of career adaptability by testing a theory-driven process model of adaptation. By doing so, the present research address the limitations of piecemeal approaches that have been used by previous career adaptability research. More importantly, it clarifies the nature of the career adaptability construct and offers important preliminary insight for understanding the suggested sequential relationship between the components of career construction model of adaptation (e.g., adaptive readiness, adaptability resources, and adaptation results). The examination of the intervening role of career adaptability, as malleable and proximal
resources, may elucidate our understanding of how adaptive traits translate to desirable
career outcomes. Furthermore, the present research elaborates the existing nomological
net of career adaptability by providing insight on its interrelationship with other related
constructs (e.g., learning goal orientation, proactive personality, career optimism,
assimilative and accommodative coping). The integration of proactive motivation and
dual-coping perspectives clarifies the nature and function of adaptive readiness in
fostering career adaptability resources. In addition, the present research addressed the
limited focus of previous research on general outcomes (e.g., overall well-being) by
examining career-specific outcomes (e.g., career satisfaction and promotability).

Secondly, career construction theory is enriched by testing underlying
psychological mechanisms and contextual boundary conditions of adaptability. For
instance, the present research elucidates how career adaptation (e.g., occupation
specification indicated by entrepreneurial intention) occurs by examining the mediating
role of entrepreneurial self-efficacy as well as how these beliefs are strengthened for
individuals with prior exposure to family business. The integration of self-efficacy in
the link between adaptability and entrepreneurial intent brings to light the important role
of socio-cognitive mechanisms in career development. In addition, the inclusion of
contextual factors as moderating variables in career adaptation confirms career
construction’s proposition that adaptability is influenced by opportunities in one’s
environment (Savickas & Porfeli, 2012). Practically, this is significant as an
understanding of the underlying psychological mechanism and contextual boundary
conditions of adaptation can aid in the development of career counseling and training
interventions.

Thirdly, the present research advances our knowledge of career adaptability by
expanding the scope of its applicability to different types of careers (e.g., organizational
and entrepreneurial), career stages (e.g., university students and working adults),
countries (e.g., developed and developing). For instance, career adaptability has not been extended yet to study entrepreneurs’ career development despite the salience of flexibility and personal agency in business venture creation. By expanding the scope of career adaptability research, we obtain a clearer understanding of how it operates in different contexts. Moreover, it supports the generalizability and external validity of career construction theory’s model of adaptation.

Finally, we also extend the current line of construct validation efforts by providing further CAAS internal validity evidence across varying contexts and using samples higher up the development continuum (e.g., working adults). We assert that the advancement of career adaptability hinges on developing a conceptually robust scale to measure it. Therefore, expanding the scope of construct validity evidence strengthens not only the cross-national measurement equivalence and utility of CAAS, but it also elucidates the conceptual underpinnings of career adaptability

5. **Research Context of the Empirical Papers**

The studies presented in the thesis examines career adaptability in multiple contexts (e.g., Australia, Serbia, and Philippines) with the aim of extending the CAAS international work by providing validity evidence in a wider range of settings. Continued validation efforts in other countries, specifically non-Western and developing economies, are clearly needed to understand how career adaptability operates in diverse contexts. By doing so, we gain a better understanding of the psychosocial nature of career adaptability and expand the cross-country applicability of the CAAS measure. Indeed, international CAAS validation studies are necessary precursors for future career research to examine cultural variables that will shed light on how the environment influence career adaptation. Environmental factors (e.g., economic conditions, culture, and social norms) shape how individuals perceive their work life, act upon career opportunities, and adjust to constraints (Savickas & Porfeli, 2012). The
three contexts (e.g., Australia, Serbia, and Philippines) included in the thesis represent developed, transitioning, and developing countries that were less examined in previous research. Each country presents a unique array of opportunities and challenges that prompts the development and expression of career adaptability resources. An overview of these country characteristics are described in the following paragraphs. In addition, we offer justifications on why these countries qualify as a fitting context for career adaptability research.

Australia is essentially profiled as a nation that endorses Western cultural values given its Anglo-Saxon roots. Highly individualistic societies like Australia give importance to initiative, self-reliance and self-expression. It is also considered to be a highly indulgent nation that promotes optimistic attitudes and high regard for realising personal desires (Hofstede, 2001). Correspondingly, we consider learning goal orientation, proactive personality, and career optimism as adaptive tendencies relevant to our Australian sample in Paper 1. These person factors exemplify agentic, future-oriented, and positive dispositions that are congruent with prominent Australian values. In terms of economic indicators, Australia is considered a developed country with a strong advance economy (OECD, 2013). Despite its remarkable economic performance, the stability of Australia’s labor market remains at risk to global economy threats. In fact, the International Labour Organization (2013) projects a wide ranging and dispiriting upward trend in unemployment due to the global economy's slow recovery. Australia's unemployment rate has slightly increased from 5.2% to 5.6%, with its labor under-utilization rate (i.e., workforce over-qualification and skills mismatch) increasing from 12.5% to 13.3% (Australian Bureau of Statistics, 2013a). We expect that the growing proportion of highly-skilled young Australians consequently are the most vulnerable to these impending job crisis. Therefore, it is imperative to better understand how young people can be more equipped to adapt successfully in such an increasingly
unpredictable work environment. We expect that adaptive trait-like variables (learning goal orientation, proactive personality, and career optimism) increases adaptability or the self-regulation resources needed to deal with impending career challenges.

Serbia has undergone profound institutional transition which significantly shaped its cultural values. The nation’s communist past, particularly its emphasis on equality and safety, has reinforced high levels of uncertainty avoidance (Hofstede, 2001). This finding suggests low tolerance of ambiguity, innovation and risks, which is also prominent in other transitioning economies and young democracies (Podrug, Filipovic, & Stancic, 2014). Interestingly, entrepreneurship is becoming a popular alternative career pathway for young Serbians in response to the scarcity of job opportunities and skills mismatch (Economy Watch, 2013). Although entrepreneurship presents uncertainty and risks, young Serbians perceived it as a means to increase income and to achieve sustainable security (Stefanovic, Rankovic and Prokic, 2011). Hence, unlike in developed countries where business ventures are innovation-driven, the popularity of entrepreneurship in Serbia can be classified as more necessity-driven. The unique challenges associated with Serbia’s transition creates an environment that necessitates resilience. We consider this growing preference for entrepreneurship among young Serbians as an expression of their career adaptability or readiness to cope with change. In view of this, we examine the underlying psychological mechanism (e.g., entrepreneurial self-efficacy) and boundary condition (e.g., prior exposure to family business) that explains the link between career adaptability and entrepreneurial intention.

The Philippines is a collectivistic society that values interdependence, loyalty and high regard for social relationships (Church, 1987). It also ranked highly in the power distance dimension, which suggests that it is a hierarchical society that upholds respect for authority and tolerance for unequal distribution of power (Hofstede, 2001).
These cultural values are manifested in how Filipinos’ enact their careers, specifically in their high regard for family ties (Salazar-Clemena, 2002). For instance, power distance and interdependence are evident in the extent to which Filipino parents' actively engage in their children’s career planning and decision making (Garcia, Restubog, Toledano, Tolentino, & Rafferty, 2012; Restubog, Florentino, & Garcia, 2010). In terms of economic indicators, the Philippines is considered a developing country. It has demonstrated steady economic growth and upward employment trends in varied industries (Bureau of Labor and Employment Statistics, 2013). Despite this promising developments, prevailing underemployment and skills mismatch issues continue to be a main career concern of Filipino workforce. The uncertainties instigated by the economic situation and competitive employment conditions influence Filipinos' construal of careers. Thus, occupational choices are strongly influenced by the desire for economic improvement more than achieving fit and self-actualization (Watts & Fretwell, 2004). Most workers in the Philippines also cannot afford to remain unemployed hence they take on any job that could sustain a living (Sugiyarto, 2007). Considering these career issues, the Philippines is a suitable context to examine the overall model of career adaptation. Examining career adaptability in this context provides insight as to how individuals can cope and sustain a career in face of disruptions brought about by economic stress or personal circumstances

6. **Organization and Linkage of the Empirical Papers**

This section describes the approach taken to writing this thesis and the organization of the subsequent chapters. The PhD thesis consists of five chapters and three empirical studies. At the time of submission, all three papers were published in the Journal of Vocational Behavior. Given the nature of the PhD thesis as a compilation, Chapter 1 has provided a context of the research program, review of the relevant
Figure 6. The research model
literature, and a broad theoretical overview. Chapter 2, 3, and 4 presents the empirical papers which focus on the validation of the career adaptability measure and test of the career construction model of career adaptation. Each chapter begins with a preface that outlines the publication details, the candidate’s detailed research contributions, and each co-author’s consent for including the paper in the thesis. The concept and measurement of career adaptability across different contexts is described in detail through Empirical Papers 1, 2, and 3. Additional sections (e.g., hypotheses and results) that were not included in the actual publication, due to reviewer suggestions and journal page limit constraints, were included in the thesis chapters to facilitate a more comprehensive and deeper understanding of each empirical investigation. The three studies are then presented in manuscript format.

As illustrated in Figure 6, the empirical papers included are organized according to the extent to which it tested the career construction model of career adaptation. Thus, it progresses from validating the CAAS measure in each research context (e.g., Australia, Serbia, and Philippines) then examining the antecedents, consequences, to testing the overall model of career adaptation. The focus of each paper also progresses according to the sample’s career stages, from examining career adaptability among university students (Papers 1 to 2) to working adults (Paper 3). A summary of the research design for each study is presented in Table 2.

Chapter 2 titled, “Career adaptation: The relation of adaptability to goal orientation, proactive personality, and career optimism”, presents a correlational study with Australian university students which examined the dispositional antecedents of career adaptability. Specifically, this research extends the current literature by examining the link between the adaptivity (i.e., readiness or willingness to adapt) and adaptability (i.e., resources or ability to adapt) elements of career construction theory. Adaptivity was operationalized in terms of motivational factors, namely learning goal
Table 2
Summary of Research Design for Each Study.

<table>
<thead>
<tr>
<th>Empirical Paper</th>
<th>Research Context</th>
<th>Sample</th>
<th>Study Variables</th>
<th>Predictors</th>
<th>Moderator</th>
<th>Mediator</th>
<th>Outcomes</th>
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<td>1</td>
<td>Australia</td>
<td>N = 555 university students</td>
<td>Proactive personality, Learning goal orientation, and Career optimism (T1)</td>
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<td>Career adaptability (T2)</td>
<td></td>
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<tr>
<td>2</td>
<td>Serbia</td>
<td>N = 380 university students</td>
<td>Career Adaptability (T1)</td>
<td>Family Business (T1)</td>
<td>Entrepreneurial Self-efficacy (T2)</td>
<td>Entrepreneurial Intentions (T3)</td>
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<tr>
<td>3</td>
<td>Philippines</td>
<td>Sample 1, N = 289 university students</td>
<td>Tenacious goal pursuit and Flexible goal adjustment</td>
<td>---</td>
<td>Career Adaptability</td>
<td>Career Satisfaction</td>
<td></td>
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<td></td>
<td></td>
<td>Sample 2, N = 495 full-time employees</td>
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<td></td>
<td></td>
<td>Promotability</td>
<td></td>
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</table>

*Note:* T1 = Time 1, T2 = Time 2, T3 = Time 3; Paper 1 = 4 weeks data collection time interval; Paper 2 = 4 months data collection time interval.
orientation, proactive personality, and career optimism. The study demonstrated validity evidence for CAAS and confirmed the positive influence of motivational characteristics (i.e., learning goal orientation, career optimism, and proactive personality) on developing adaptability resources in the early career stage.

Chapter 3 titled, “The role of career adaptability in predicting entrepreneurial intentions: A moderated mediation model”, extends the current nomological net by applying the career construction perspective to explain early entrepreneurial career development, specifically how career adaptability resources influences the formation of intent to initiate business ventures among young Serbians. The study demonstrated validity evidence for CAAS in a developing economy context and confirmed the link between career adaptability and entrepreneurial intentions, where entrepreneurial self-efficacy act as an explanatory variable and prior exposure to family business as an enhancing contextual condition.

Chapter 4 titled, “Validation of the Career Adapt-Abilities Scale and an examination of a model of career adaptation in the Philippine context”, presents convergent validation of CAAS among university students and an empirical test of a mediated model of career adaptation among working adults from the Philippines. In line with the career construction propositions, it tested an integrative process model of career adaptation by examining the role of career adaptability as an underlying psychological mechanism linking coping dispositions (e.g., tenacious goal pursuit and flexible goal adjustment) to career success outcomes. Two important indicators of career success were measured in the study, namely career satisfaction and promotability. Consistent with the career adaptability literature, career adaptability mediated the relationship between coping dispositions and career success. The findings of this study provided groundwork for an overall test of the model of career adaptation.
Finally, Chapter 5 provides an overall general discussion of the empirical papers and summarizes the main findings of the research. Implications to career theory and practice are offered and future research directions are suggested in the final chapter.
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self, career adaptability and job search outcomes: Examining mediating and 

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professional competence of social work students in China: A career construction 


## Chapter 2

### Co-author Authorization Form (Paper 1)

**Co-author Authorisation Form**

By signing below co-authors agree to the listed publication being included in the candidate's thesis and acknowledge that the candidate is the primary author and contributed greater than 50% of the content of the publication.

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### Co-author’s Declaration (to be completed by the collaborator)

I authorise the inclusion of this publication in the candidate’s thesis and certify that:

- the declaration made by the candidate on the “Declaration for a thesis with publication” form correctly reflects the extent of the candidate’s contribution to this work;
- the candidate contributed greater than 50% of the content of the publication and is the “primary author” ie. the candidate contributed substantially to manuscript preparation and execution.

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Chapter 2

Career adaptation: The relation of adaptability to goal orientation, proactive personality, and career optimism


1. Introduction

The primary purpose of this paper is to examine the dispositional antecedents of adaptability based on the Career Construction Theory (CCT; Savickas, 2013) model of career adaptation. The model generally posits that successful adjustment (i.e., adaptation) is expected for individuals who are more willing (i.e., adaptivity) and able (i.e., adaptability) to express fitting behaviors (i.e., adapting) that address changing career conditions (Savickas & Porfeli, 2012). The current study aimed to provide preliminary empirical evidence to clarify the relationship between the adaptivity and adaptability components of the CCT framework. Aligned with this theory, it is expected that individuals who are predisposed to be more willing to change their behaviors would develop better adaptability resources to respond effectively to their career circumstances (e.g., school-to-work transition). In the research reported here, adaptivity is conceptualized as self-regulative tendencies and operationalized as learning goal orientation, proactive personality, and career optimism. By examining these relationships, we elucidate the specific paths of the relationship between the components of the CCT model, hence gain a better understanding of dispositional factors that foster career adaptability.

In order to test the theoretical assumptions of CCT, a valid instrument is required. Thus, this study also aimed to provide factorial and convergent validity evidence for the career adaptability measure (i.e., Career Adapt-Abilities Scale). Career
adaptability resources are conceptualized as multidimensional and hierarchical. Specifically, at the second-order level of the hierarchy, the four dimensions of the first-order level combine to become a global indicator of adaptability (Savickas & Porfeli, 2012). Factorial validity would be supported if the hierarchical five factor model shows a better fit than alternative models (e.g., one, two, and three factors). Furthermore, convergent validity is an evidence of similarity between the measure of interest and other conceptually related constructs and established measures (DeVellis, 1991). A correlational analysis indicates the extent to which measures relate similarly, hence a moderate to strong correlation is expected between theoretically congruent constructs (Brown, 2006). Thus, learning goal orientation, proactive personality, and career optimism are predicted to positively relate to career adaptability.

Conceptualized as a set of psychosocial resources and transactional competencies, the formation of career adaptability is contingent upon the dynamic interplay between personal and environmental factors. Further empirical validation across different contexts is thus necessary given the varying levels of opportunities (e.g., access to education and employment) and constraints (e.g., shrinking employment prospects) influencing the development and use of individual adaptability resources. While the Career Adapt-Abilities Scale international form demonstrated excellent reliability and cross-national measurement equivalence (Savickas & Porfeli, 2012), its validity for use in the Australian context requires further evidence. In view of this, the present study also aims to contribute to this line of work by examining the convergent validity and test–retest reliability of CAAS along with the fit of its multidimensional and hierarchical model in the Australian context.

To further explain the contextual relevance of the current research, a description of the Australian work situation with particular focus on pertinent youth career-related
issues and the significance of career adaptability for successful adjustment is presented in the following section.

1.1. The Australian context

In comparison to other developed countries, Australia has demonstrated remarkable resilience from the extensive economic losses that ensued from the global financial crisis. Its robust labor market is characterized by employment growth in the last five years. Alongside this growth is a notable increase in the proportion of young Australians participating in formal education and vocational training (Department of Education, Employment, and Workplace Relations, 2013). Moreover, Australia fared well and generally above the recent Organisation for Economic Cooperation and Development's (2013) country average on youth education and employment (e.g., tertiary education completion rate of 82% by comparison to OECD's average rate of 70%) and employment indicators (e.g., employment rate of 60.7% by comparison to OECD's average rate of 37.8%).

However, Australia's steadfast labor market remains at risk as the unstable conditions of the global economy threaten to slow down its domestic productivity. The International Labour Organization (2013) projects a wide ranging and dispiriting upward trend in unemployment instigated by the global economy's slow recovery. Over one year, Australia's unemployment rate has slightly increased from 5.2% to 5.6%, with its labor under-utilization rate (i.e., workforce over-qualification and skills mismatch) increasing from 12.5% to 13.3% (Australian Bureau of Statistics, 2013a).

Further, the ILO's (2013) global trend report suggests that young people are most vulnerable to the prevailing job crisis. In the case of young Australians, the observed upward trend in educational participation and completion levels occur alongside an increased movement towards casual employment and high underemployment rates as transition and access to full-time employment remain highly competitive (Foundation
for Young Australians, 2013). In effect, the current slow recovery of the global economy and unrelenting labor market volatility dim the bright career prospects of young people. For instance, around 76.1% of bachelor degree graduates seeking fulltime jobs were in fulltime employment within four months of completing their degrees in 2012 (Graduate Career Australia, 2012), a decrease from 79.2% in 2009 and 85.2% in 2008. Thus, it is imperative to further understand how young people can be more equipped to navigate through an increasingly complex work environment characterized by rapid and pervasive change.

1.2. Career Adaptability

In today’s fast-evolving career context marked by multiple transitions and increased personal responsibility, generic competencies transferrable to various occupational situations, in addition to discipline-specific and technical skills, are increasingly becoming more valued in the workforce. For instance, self-management skills are highlighted in various national policy reports (e.g., The Australian Blueprint for Career Development and Employability Skills for the Future Framework) as one of the vital generic skills for the Australian workforce. Australian employers also noted these generic skills as enabling factors for organizational productivity as well as employee career development (Australian Chamber of Commerce and Industry & Business Council of Australia, 2002; Miles Morgan Australia, 2010). Correspondingly, research evidence suggests that career adaptable individuals are more capable of finding better job opportunities, successfully transitioning to work, and securing high quality employment (Klehe, Zikic, van Vianen, Koen, & Buyken, 2012; Koen, Klehe, & van Vianen, 2012).

Career adaptability is one of the key enabling meta-competencies in a fast-paced and evolving work context (Hall & Mirvis, 1995; Savickas et al., 2009). It refers to a set of “attitudes, competencies, and behaviors that individuals use in fitting themselves to
work that suits them” (Savickas, 2013; p.45). A multidimensional construct, it comprises four self-regulatory strengths (i.e., concern, control, curiosity, and confidence) that facilitate preparation for current and anticipated occupational changes. First, concern pertains to a time perspective towards preparation for one's career future such as developing a career vision. Second, control indicates a sense of ownership and responsibility to exert influence on one's career. Third, curiosity refers to the interest in exploring possible selves and career opportunities in one's environment. Lastly, confidence pertains to the pursuit of career aspirations and an anticipation of success in face of obstacles. Overall, these four adapt-abilities enable adjustment to career-related changes, person–environment integration, and successful transitioning across the career lifespan (Savickas & Porfeli, 2012).

1.3. Career Adaptivity

Career adaptivity represents individual tendencies that precede the development of adaptability resources and adapting behavioral responses. Adaptivity refers willingness to change and negotiate career uncertainties with fitting behavioral responses (Savickas & Porfeli, 2012). Hence, an adaptive person exemplifies career flexibility and readiness to take developmental actions as they deal with career tasks and transitions. In view of this, we consider adaptive personal characteristics to positively predict career adaptability. Prior studies mainly examined the relationship between career adaptability and Big five personality traits. As expected, a positive relationship was found between openness to experience, extraversion, and career adaptability (Rossier et al., 2012; Texeira et al., 2012; Van Vianen, Klehe, Koen, & Dries, 2012; Zacher, 2014). Our research attempts to move our understanding of adaptivity forward by looking at other individual difference variables that are essential in self-directed career management.
In this study, adaptivity was operationalized using trait-like self-regulative tendencies (e.g., learning goal orientation, proactive personality, and career optimism) that denotes openness to self-transformation. These person factors share agentic, future-oriented, and positive dispositions necessary to foster career adaptability resources of concern, control, curiosity, and confidence. We argue that learning goal orientation, proactive personality, and career optimism propels accommodative goal-directed behaviors typically required for effective career adaptation. These person factors were considered to be most important because its conceptual underpinnings are anchored in self-regulation capacities to actively respond and adjust to life circumstances. The focus on these positive trait-like characteristics is also aligned with the career construction theory’s view of adaptivity as a stable and durable tendency. Furthermore, the theory suggests that adaptivity may be operationalized using multiple indicators including proactive personality, openness to change, and cognitive flexibility (Savickas, 2013). Indeed, prior research also suggests that individuals who have the propensity to be proactive, flexible, and open to new experiences are more likely to manage their careers effectively than those who do not possess these traits (Eby, Butts, & Lockwood, 2003; van Vianen, Klehe, Koen, & Dries, 2012).

In the following section, theoretical considerations for using learning goal orientation, proactive personality, and career optimism as operational indicators of adaptivity are outlined. This is followed by the formal hypotheses linking each construct with career adaptability.

1.3.1. Learning goal orientation

Individuals differ in their willingness to adapt and respond to career circumstances (Savickas & Porfeli, 2012). To explicate this variation in adaptive readiness, we first draw from a mastery goal orientation perspective which puts forward individual differences in the construal of career situations and motivational patterns
relevant to career adaptability. Specifically, we conceptualize adaptivity in terms of learning goal orientation, a relatively stable dispositional trait characterized by the pursuit of competence development and effective persistence in the face of obstacles (Dweck, 1986). Learning goal-oriented individuals perceive ability as malleable and proficiency as contingent on expended effort. As a result of this mastery orientation, they tend to engage in adaptive behaviors to enhance competencies such as setting higher goals, goal striving, and welcoming feedback in response to challenging life circumstances (Dweck & Legget, 1988). They also view challenging situations as an opportunity for development. Hence, learning goal oriented individuals are more likely to perceive life circumstances (e.g., work transitions) as career enablers rather than barriers. This tendency towards maximizing personal growth may also propel individuals to further develop their ability to adapt to career-related challenges. In sum, the adaptive motivational pattern inherent in learning goal orientation facilitates the generation of self-regulative strategies essential to career adaptation as it promotes the “establishment, maintenance, and attainment of personally challenging and personally valued achievement goals (Dweck, 1986, p. 1040).”

The particular focus on progress and effort among learning goal-oriented individuals fosters self-regulatory strategies underpinning successful career adaptation. Past research has correspondingly found that an individual's endorsement of learning goal orientation associated with desirable outcomes such as positive coping (Elliot & Dweck, 1988), help-seeking behaviors (Ryan & Pintrich, 1998), higher goal commitment (Klein & Lee, 2006), and self-esteem (Button, Mathieu, & Zajac, 1996). In the context of career development, higher learning goal orientation associated with increased self-directed learning, career aspirations, career decision-making self-efficacy, and career satisfaction (Baek-Kyoo, Sunyoung, & Jeong, 2013; Creed, Tilbury, Buys, & Crawford, 2011; Garcia, Restubog, Toledano, Tolentino, & Rafferty, 2012; Godshalk &
Sosik, 2003). Based on this research evidence, it is clear that learning goal orientation is a trait that fosters development of adaptability in the form of career competencies such as exploration, planning, and goal pursuit towards personal development. Thus, we expect:

*Hypothesis 1. Learning goal orientation is positively related to career adaptability.*

1.3.2. Proactive personality

In addition to willingness to adjust to change, adaptivity also involves readiness to take action in order to improve one's career circumstances (Savickas, 2013). To this end, we further conceptualize adaptivity in terms of proactive personality which pertains to an individual's predisposition to initiate action aimed at influencing one's environment (Bateman & Crant, 1993). Aligned with the emphasis on personal agency in Career Construction Theory, the proactive perspective posits that individuals can enact change to improve their current circumstances and are not always passive recipients of environmental constraints (Crant, 2000). When faced with the need for career adaptation, proactive individuals are likely to successfully prepare for and negotiate career-related changes given their propensity to identify opportunities for improvement and create work environments that are congruent with their vocational needs (Bateman & Crant, 1993; Seibert, Crant, & Kraimer, 1999). Thus, we expect proactive individuals to be more responsive in actively shaping their work environment and developing their career adaptability resources.

Several lines of research suggest a positive association between proactive personality and career adaptability. First, the individual's propensity to be proactive has been found to be associated with self-regulative strategies, such as goal setting (Fugate, Kinicki, & Ashforth, 2004); optimism (Rottinghaus, Day, & Borgen, 2005); as well as coping, information seeking, and self-direction (Seibert, Kraimer, & Crant, 2001). Past research has also demonstrated its positive relationship to a number of important job-
related outcomes, such as job performance (Crant, 1995); tolerance for stress in demanding jobs (Parker & Sprigg, 1999) and leadership effectiveness (Bateman & Crant, 1993; Crant & Bateman, 2000; Deluga, 1998). Similarly, career researchers pointed out the role of proactivity in relation to a boundaryless career mindset (Jackson, 1996; Mirvis & Hall, 1996) and protean career orientation (Creed, Macpherson, & Hood, 2010). Further empirical studies also support the positive association between proactivity and desirable career outcomes (e.g., socialization and organization entry in Ashford & Black, 1996; Morrison, 1993; career planning in Frese, Fay, Hillburger, Leng, & Tag, 1997; and career success in Seibert et al., 1999, 2001). Consistent with these theoretical and empirical considerations, it is predicted that:

Hypothesis 2. Proactive personality is positively related to career adaptability.

1.3.3. Career optimism

Finally, we conceptualize adaptivity in terms of career optimism, defined as a non-intellective motivational factor reflecting expectations of the best possible outcome in relation to one's future career development (Rottinghaus et al., 2005). An optimistic individual is characterized as keenly interested in his/her career future, enthusiastically engages in learning that is directly related to that imagined future, and feels comfortable that he/she is on the appropriate path for career success (McIlveen, Beccaria, & Burton, 2013, p. 230). This positive future orientation inherent in career optimism relates to adaptive readiness as it allows individuals to remain confident as they negotiate career obstacles and perform career planning tasks. Accordingly, optimists are likely to demonstrate willingness to respond to, and confidently overcome, career impediments.

The rationale for using career optimism to measure an aspect of adaptivity is drawn from the idea that positive expectancies compel individuals to instigate and sustain efforts to cope with adversities such as career instability (Scheier, Carver, & Bridges, 1994). Optimists tend to manage change and uncertainty favorably because
they are able to demonstrate flexibility when appraising and responding to new situations (Aspinwall, Richter, & Hoffman, 2001). As a result, optimists adjust better to life circumstances because they have more stable and adaptive coping tendencies (Carver, Scheier, & Weintraub, 1989; Scheier et al., 1994).

A solid body of research has shown the benefits of optimism on health-related adjustment (e.g., better quality of life and subjective well-being in Scheier & Carver, 1992; less psychological distress in Carver et al., 2005; Fitzgerald, Tennen, Affleck, & Pransky, 1993; Trunzo & Pinto, 2003) as well as on academic adjustment and satisfaction (Aspinwall & Taylor, 1992; McIlveen et al., 2013). Furthermore, optimism has not only been found to predict adaptive career planning strategies (Creed, Patton, & Bartrum, 2002), career optimistic individuals have been reported as striving higher academically, report greater comfort with their educational and career-related plans, as well as engage in activities that enhance their career insight (Rottinghaus et al., 2005). For these reasons, we expect that:

**Hypothesis 3. Career optimism is positively related to career adaptability.**

2. Method

2.1. Participants and procedures

The overall sample consisted of 555 undergraduate university students enrolled in business and management courses at two universities in South Australia and the Australian Capital Territory. The latest Australian Social Trends indicate business and management (25%) as one of the most popular fields of study and report the Australian Capital Territory as the state with the largest proportion of higher education students (Australian Bureau of Statistics, 2013b). The overall sample comprised 57% female with a mean age of 22.10 years (SD = 2.19). Out of this group, responses from 447
participants were used for testing the research hypotheses, while responses from 108 additional participants were used to examine the test-retest reliability of CAAS.

Each participant received a cover page with information about the purpose of the study as well as the contact details of the researchers should they agree to fully participate and in the event participants decide to withdraw participation at any time during the research process. They were also reminded that participation is voluntary and non-participation or withdrawal from the study at any point in time would not jeopardize their grade in class or relationship with the lecturer and university. Participants were asked to sign the informed consent forms prior to completing the survey questionnaires, which includes demographic information and a career questionnaire (see Appendix E).

To ensure anonymity and confidentiality, participants were asked to generate an anonymous code. The anonymous code was generated by using the first two letter of their father’s first name, the last two letters of their mother’s first name, and the day of their birth. Personal information of the participants remains confidential via the unique codes they generate. Moreover, participants were assured of confidentiality as written in the information sheet and consent form. All participants provided their informed consent regarding survey participation and the study followed the ethical principles required by the Australian National University – Human Research Ethics Committee (see Appendix B).

At Time 1, participants (N = 447) received a survey packet containing measures of adaptivity (e.g., learning goal orientation, proactive personality, and career optimism). At Time 2, four weeks after Time 1 data collection, the same participants (N = 447) and an additional 108 students were asked to answer the career adaptability scale. To examine the test–retest reliability of CAAS, a subsample of 108 students from
the overall sample of 555 completed the career adaptability scale four weeks later (after
Time 2 data collection).

Upon completion, participants were instructed to return the surveys in a sealed
envelope directly to the researcher. In exchange for their participation, each participant
earned an extra class credit. The researcher’s previous experience suggests that
inducements such as these encourage participants to participate and contribute to a
positive impression about the research project.

2.2. Measures

Unless otherwise specified, the response format for all items, excluding
demographic variables, was a 7-point Likert-type scale (1 = strongly disagree; 7 =
strongly agree). This response format was employed as opposed to the 5-point Likert
scale used in previous CAAS studies to provide participants with a wider range of
response anchors to choose from and to also minimize neutral responses in the scale
(Matell & Jacoby, 1972). Previous research suggests that limited response options may
result in loss of power and difficulty in detecting significant effects (Aguinis, Bommer,
& Pierce, 1996).

2.2.1. Career Adapt-Abilities Scale (Savickas & Porfeli, 2012)

The CAAS-International form contains 24 items that combine to yield a total
score indicating career adaptability (for the items, see Savickas & Porfeli, 2012). The 24
items are divided equally into four subscales that measure the adaptability resources of
concern, control, curiosity, and confidence. The item descriptive statistics and loadings
from the confirmatory factor model appear in Table 1. Participants responded to each
item indicating the extent to which they have developed abilities to build their careers
using a 7-point Likert-type scale ranging from 1 (not strong) to 7 (strongest). Sample
items for each subscale include, “Becoming aware of the educational and career choices
that I must make (Concern), “Taking responsibility for my actions (Control), “

“Becoming curious about new opportunities (Curiosity),” and “Working up to my

ability (Confidence).” The CAAS global measure has a reported reliability of $\alpha = .92$

and subscale scores for concern $\alpha = .83$, control $\alpha = .74$, curiosity $\alpha = .79$, and

confidence $\alpha = .85$ (Savickas & Porfeli, 2012). As shown in Table 1, the internal

consistency estimates of the global career adaptability measure was $\alpha = .94$. The

internal consistency for the subscales are concern ($\alpha = .85$), control ($\alpha = .84$), curiosity

($\alpha = .84$), and confidence ($\alpha = .89$).

2.2.2. Learning goal orientation (Button, Mathieu, & Zajac, 1996).

Learning goal orientation was measured at Time 1 using an 8-item scale
designed to assess desire to perform challenging work, acquire new skills, and develop
alternative strategies when tackling a challenging task. Participants indicated how
strongly they agreed with statements such as: “The opportunity to extend the range of
my abilities is important to me” and “I prefer to work on tasks that force me to learn
new things.” These items were rated on a 7-point Likert scale that ranged from strongly
disagree (1) to strongly agree (7). A high score indicates a stronger learning goal
orientation. Prior research reported internal consistency coefficients ranging from $\alpha =
.81$ to $\alpha = .85$ (Button, Mathieu, & Zajac, 1996). In this study, the internal consistency
for this scale in this sample was .90.

2.2.3. Proactive personality (Bateman & Crant, 1993)

Participants were asked to rate the extent to which they agreed with statements
such as: “I am constantly on the lookout for ways to improve myself” and “I always look
for better ways to do things.” A high score indicates a stronger proactive personality.
Internal consistency for this scale in this sample was .90. Bateman and Crant (1993)
reported internal reliabilities ranging from .87 to .89 for their 17-item scale. Due to time
constraints imposed by the participating universities, we used a shorter 10-item version of the original measure of proactive personality. The 10 items with the highest factor loadings were retained out of the original 17-item scale (Bateman & Crant, 1993).

2.2.4. Career optimism (Rottinghaus et al., 2005)

Career optimism was measured using a 10-item scale. The item statements were slightly modified to reflect optimism regarding the students' future business ventures. One item (e.g., it is difficult for me to set career goals) was dropped because it was too general to be modified in relation to future business ventures. On a 7-point Likert scale that ranged from strongly disagree (1) to strongly agree (7), students responded to items such as “thinking about my future business venture inspires me” and “I am eager to pursue my business dreams.” Internal consistency for this scale in this sample was .80.

3. Results

3.1. Descriptive statistics and correlations of the CAAS-Australia form

The CAAS-Australia item means and standard deviations suggest that the typical response was in the range of strong to very strong. Skewness and kurtosis values for the 24 items CAAS-Australia ranged from (−.91 to −.21) and (−.28 to 1.16) respectively suggesting that the items conform to the assumptions of confirmatory
Table 1

Career adapt-abilities scale: items, descriptive statistics, standardized loadings, and internal consistency reliabilities.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Item (first-order indicators)</th>
<th>Mean</th>
<th>SD</th>
<th>Loading</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concern</td>
<td>1. Thinking about what my future will be like.</td>
<td>5.45</td>
<td>1.08</td>
<td>.62</td>
<td>.85</td>
</tr>
<tr>
<td></td>
<td>2. Realizing that today's choices shape my future.</td>
<td>5.46</td>
<td>1.12</td>
<td>.66</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Preparing for the future.</td>
<td>5.30</td>
<td>1.11</td>
<td>.83</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Becoming aware of the educational and career choices that I must make.</td>
<td>5.48</td>
<td>1.06</td>
<td>.75</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Planning how to achieve my goals.</td>
<td>5.29</td>
<td>1.14</td>
<td>.77</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Concerned about my career.</td>
<td>5.59</td>
<td>1.24</td>
<td>.53</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>1. Keeping upbeat.</td>
<td>5.20</td>
<td>1.10</td>
<td>.53</td>
<td>.84</td>
</tr>
<tr>
<td></td>
<td>2. Making decisions by myself.</td>
<td>5.48</td>
<td>1.14</td>
<td>.64</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Taking responsibility for my actions.</td>
<td>5.84</td>
<td>.95</td>
<td>.65</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Sticking up for my beliefs.</td>
<td>5.62</td>
<td>1.10</td>
<td>.78</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Counting on myself.</td>
<td>5.56</td>
<td>1.03</td>
<td>.77</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Doing what's right for me.</td>
<td>5.57</td>
<td>1.06</td>
<td>.73</td>
<td></td>
</tr>
<tr>
<td>Curiosity</td>
<td>1. Exploring my surroundings.</td>
<td>5.24</td>
<td>1.13</td>
<td>.66</td>
<td>.84</td>
</tr>
<tr>
<td></td>
<td>2. Looking for opportunities to grow as a person.</td>
<td>5.60</td>
<td>1.08</td>
<td>.71</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Investigating options before making a choice.</td>
<td>5.47</td>
<td>1.09</td>
<td>.68</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Observing different ways of doing things.</td>
<td>5.34</td>
<td>1.07</td>
<td>.72</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Probing deeply into questions I have.</td>
<td>5.02</td>
<td>1.18</td>
<td>.62</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Becoming curious about new opportunities.</td>
<td>5.54</td>
<td>1.07</td>
<td>.69</td>
<td></td>
</tr>
<tr>
<td>Confidence</td>
<td>1. Performing tasks efficiently.</td>
<td>5.36</td>
<td>1.11</td>
<td>.62</td>
<td>.89</td>
</tr>
<tr>
<td></td>
<td>2. Taking care to do things well.</td>
<td>5.47</td>
<td>1.05</td>
<td>.73</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Learning new skills</td>
<td>5.53</td>
<td>1.04</td>
<td>.76</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Working up to my ability</td>
<td>5.46</td>
<td>1.09</td>
<td>.80</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Overcoming obstacles.</td>
<td>5.35</td>
<td>1.06</td>
<td>.78</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Solving problems.</td>
<td>5.48</td>
<td>1.03</td>
<td>.73</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Construct</th>
<th>Construct (second order indicators)</th>
<th>Mean</th>
<th>SD</th>
<th>Loading</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adaptability</td>
<td>1. Concern</td>
<td>5.43</td>
<td>.85</td>
<td>.73</td>
<td>.94</td>
</tr>
<tr>
<td></td>
<td>2. Control</td>
<td>5.54</td>
<td>.80</td>
<td>.88</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Curiosity</td>
<td>5.37</td>
<td>.82</td>
<td>.88</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Confidence</td>
<td>5.44</td>
<td>.85</td>
<td>.85</td>
<td></td>
</tr>
</tbody>
</table>

Note: N = 555; all factor loadings are statistically significant at p < .001.
Table 2

Zero-order correlations of CAAS-Australia subscales and total score.

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Concern</td>
<td>5.43</td>
<td>.85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Control</td>
<td>5.54</td>
<td>.80</td>
<td>.55</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Curiosity</td>
<td>5.37</td>
<td>.82</td>
<td>.56</td>
<td>.64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Confidence</td>
<td>5.44</td>
<td>.85</td>
<td>.54</td>
<td>.69</td>
<td>.67</td>
<td></td>
</tr>
<tr>
<td>5. Career adaptability</td>
<td>5.44</td>
<td>.70</td>
<td>.79</td>
<td>.85</td>
<td>.85</td>
<td>.87</td>
</tr>
</tbody>
</table>

Note: N = 555; all correlations are statistically significant at p < .001.
factor analysis for this sample. Skewness and kurtosis values for the four CAAS-Australia subscales ranged from −.37 to −.08 and −.35 to .40 respectively. These values suggest that the subscales conform to the assumptions of correlation-based statistics for this sample. As shown in Table 2, correlations among the adaptability subscales and the global adaptability score ranged from .54 to .87 and were all statistically significant (p < .001). Scale means, standard deviations, and zero-order correlations for all study variables appear in Table 3.

3.2. Confirmatory factor analysis of the CAAS-Australia form

To evaluate the model fit of CAAS, a confirmatory factor analysis (CFA) was carried out using AMOS® 20 for Windows (Amos Development Corporation, Spring House, PA, USA) program with maximum likelihood (ML) estimation procedure. Assessment of model goodness-of-fit is evaluated based on the amount of discrepancy between the implied covariance matrix and the observed covariance matrix. In this study, multiple indices from each fit class (e.g., absolute, parsimony, and comparative) were considered to test model adequacy and to supplement the commonly used chi-square statistic as it is heavily influenced by sample size, normality, and model complexity (Brown, 2006).

Guided by the suggestions provided by Hu and Bentler (1999), a good fitting model is determined based on recommended cut-off scores for the following fit statistics: 1) a chi-square p value of greater than .05, 2) a root mean square error of approximation (RMSEA) of less than .06, 3) a normed chi-square (χ²/df) value of less than 3, 4) a standardized root mean square residual (SRMR) of less than .08, and 4) a cut-off value close to .95 for Tucker Lewis Index (TLI) and Comparative Fit Index (CFI). Although these rules of thumb are appropriate for ML estimation procedures,
Table 3
Means, standard deviations, and zero-order correlations of study variables.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Time 1 learning goal</td>
<td>5.50</td>
<td>.90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>orientation</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Time 1 proactive</td>
<td>5.11</td>
<td>.86</td>
<td>.42</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>personality</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Time 1 career</td>
<td>4.37</td>
<td>.86</td>
<td>.28</td>
<td>.46</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>optimism</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Time 2 concern</td>
<td>5.37</td>
<td>.83</td>
<td>.26</td>
<td>.36</td>
<td>.30</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Time 2 control</td>
<td>5.52</td>
<td>.79</td>
<td>.31</td>
<td>.37</td>
<td>.31</td>
<td>.56</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Time 2 curiosity</td>
<td>5.34</td>
<td>.81</td>
<td>.34</td>
<td>.36</td>
<td>.23</td>
<td>.55</td>
<td>.66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Time 2 confidence</td>
<td>5.42</td>
<td>.84</td>
<td>.34</td>
<td>.44</td>
<td>.28</td>
<td>.57</td>
<td>.69</td>
<td>.65</td>
<td></td>
</tr>
<tr>
<td>8. Time 2 career</td>
<td>5.41</td>
<td>.69</td>
<td>.37</td>
<td>.45</td>
<td>.33</td>
<td>.80</td>
<td>.86</td>
<td>.85</td>
<td>.87</td>
</tr>
<tr>
<td>adaptability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: N = 447; all correlations are statistically significant at p < .001.
researchers are cautioned to avoid relying heavily on suggested cut-off criteria when assessing model fit (Nye & Drasgow, 2011). In addition to obtaining fit statistics close to the values recommended in the literature, a specified model essentially requires to be likewise supported by substantive theory.

A five factor solution was supported and had a good fit with the observed data, $\chi^2 (244, N=555) = 574.99, p<.001, \chi^2 /df = 2.357, \text{CFI} = .95, \text{TLI} = .94, \text{SRMR} = .041, \text{RMSEA} = .05 (\text{CI 90\%: .04 -.06}).$ The five factor solution obtained in this analysis is consistent with the Career Construction Theory’s hierarchical factor structure (Savickas & Porfeli, 2012). These results also conform adequately to established joint fit criteria (Hu & Bentler, 1999). In addition, the five factor model was also compared against several alternative models Model 1 incorporated all path onto a single factor, $\chi^2 (252, N=555) = 1733.99, p<.001, \chi^2 /df = 6.88, \text{CFI} = .78, \text{TLI} = .76, \text{SRMR} = .072, \text{RMSEA} = .103 (\text{CI 90\%: .098 -.108}).$ Model 2 combined indicators based on the four dimensions of career adaptability (i.e., concern, control, curiosity, confidence), $\chi^2 (246, N=555) = 738.51, p<.001, \chi^2 /df = 3.00, \text{CFI} = .93, \text{TLI} = .92, \text{SRMR} = .043, \text{RMSEA} = .060 (\text{CI 90\%: .055 -.065}).$

Results of the chi-square difference test between the four factor model (Model 2) and the five factor model (Model 3) suggested that the latter demonstrated the best fit ($\chi^2 \text{diff} (1) = 163.52, p<.001$). Table 4 presents a summary of the different model tests. Furthermore, the standardized path estimates of the manifest indicators ranged from .53 to .88, with all standardized path coefficients significant at $p < .001$ (see Table 1). The standardized loadings also suggest that all items are strong indicators of the second-order constructs, which are in turn strong indicators of the third order adaptability construct.
3.3. Comparison of the CAAS-Australia factor model to international factor model

Comparing the CAAS-Australia hierarchical factor model to the model for the CAAS-International indicated that the loadings of first-order items on the second-order factors of adaptability were generally higher. Only few items emerged as slightly lower (#1 and #6) or equal to (confidence #6) the loadings found in the CAAS-International sample. Of the second-order constructs, concern (CAAS-Australia = .73; CAAS-International = .78) and confidence (CAAS-Australia = .85; CAAS-International = .90) exhibited the greatest difference in loading between the Australian and international samples, with the international sample exhibiting a stronger loading. While the loading for control was slightly higher in the Australian sample (CAAS-Australia = .88; CAAS-International = .86), a similar loading of .88 was obtained for curiosity for both CAAS-Australia and CAAS-International.

3.4. Test–retest reliability

To examine the temporal stability of the CAAS-Australia, test–retest reliabilities were calculated using Pearson product moment correlations based on a 4-week interval. A subset of 108 students from the overall sample of 555 were included in this analysis. Table 5 presents estimates of internal consistency and test–retest reliabilities for the CAAS-Australia total score and subscales. All subscales and the total score yielded good internal consistency reliabilities ($\alpha = .83$ to .94) well above the recommended standard of .70 (DeVillis, 2012). Similarly, test–retest reliabilities were high for all four subscales of concern ($r = .73, p < .001$), control ($r = .61, p < .001$), curiosity ($r = .66, p < .001$), and confidence ($r = .70, p < .001$), well above the standard of .50 for high correlations (Cohen & Cohen, 1983). Test–retest reliability for the CAAS-Australia total score was also high and statistically significant ($r = .76, p < .001$).
### Table 4

Confirmatory Factor Analyses Model Fit Indices of Career Adapt-Abilities Scale.

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>df</th>
<th>$\chi^2$/df</th>
<th>CFI</th>
<th>TLI</th>
<th>SRMR</th>
<th>RMSEA</th>
<th>$\chi^2$ diff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1:</td>
<td>1733.99</td>
<td>252</td>
<td>6.88</td>
<td>.78</td>
<td>.755</td>
<td>.072</td>
<td>.103</td>
<td>-</td>
</tr>
<tr>
<td>One Factor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 2:</td>
<td>738.51</td>
<td>246</td>
<td>3.00</td>
<td>.93</td>
<td>.92</td>
<td>.043</td>
<td>.060</td>
<td>995.48***</td>
</tr>
<tr>
<td>Four Factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 3:</td>
<td>574.99</td>
<td>244</td>
<td>2.36</td>
<td>.95</td>
<td>.94</td>
<td>.041</td>
<td>.049</td>
<td>163.52***</td>
</tr>
<tr>
<td>Five Factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: $\chi^2$ = difference between observed and obtained covariance matrix; $\chi^2$/df = the difference in $\chi^2$ from the previous (more parsimonious) model; CFI = comparative fit index; TLI = Tucker-Lewis index; SRMR = standardized root mean-square residual; RMSEA = root mean square error of approximation. ***$p < .001$. 
### Table 5

Internal consistency and test–retest reliabilities of the overall career adaptability scale and subscales.

<table>
<thead>
<tr>
<th>Subscale/measure</th>
<th>Cronbach's alpha coefficient (Time 1)</th>
<th>Cronbach's alpha coefficient (Time 2)</th>
<th>Test–retest reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concern</td>
<td>.83</td>
<td>.87</td>
<td>.73</td>
</tr>
<tr>
<td>Control</td>
<td>.84</td>
<td>.84</td>
<td>.61</td>
</tr>
<tr>
<td>Curiosity</td>
<td>.84</td>
<td>.85</td>
<td>.66</td>
</tr>
<tr>
<td>Confidence</td>
<td>.88</td>
<td>.89</td>
<td>.70</td>
</tr>
<tr>
<td>Career adaptability</td>
<td>.93</td>
<td>.94</td>
<td>.76</td>
</tr>
</tbody>
</table>

Note: N = 108; all correlations are statistically significant at p < .001. Time 1 and Time 2 measurement periods are 4 weeks apart.
3.5. Measurement Model

The measurement model had a good fit with the observed data, $\chi^2 (179, N=447) = 290.31, p<.001$, $\chi^2/df = 1.62$, CFI = .98, TLI = .98, SRMR = .03, RMSEA = .04 (CI 90%: .03 - .05). As shown in Table 6, the standardized path estimates of the manifest indicators ranged from .72 to .91 and were all statistically significant at $p < .001$. The final measurement model was also compared against an alternative model to rule out the possibility that the latter better represents the data (Holmes-Smith, 2010). The alternative two-factor model combined all three constructs (e.g., learning goal orientation, proactive personality, and career optimism) representing adaptivity into another one factor, $\chi^2 (182, N=477) = 477.84, p<.001$, $\chi^2/df = 2.63$, CFI = .95, TLI = .95, SRMR = .18, RMSEA = .06. (CI 90%: .05 - .07). Results of the chi-square difference test between the final measurement model (four-factor model) and alternative model (two-factor model) suggested that the former demonstrates the best fit, $\chi^2$ difference (1) = 187.53 $p<.001$.

3.6. Hypotheses tests

The hypotheses were tested by examining the relationships between adaptivity (i.e., learning goal orientation, proactive personality, and career optimism) and career adaptability. As can be seen in Table 3, all correlations were significant and in the expected direction. It was proposed that learning goal orientation would associate positively with adaptability (Hypothesis 1). Significant positive correlations were found between Time 1 learning goal orientation and the CAAS subscales of concern ($r = .26, p < .001$), control ($r = .31, p < .001$), curiosity ($r = .34, p < .001$), and confidence ($r = .34, p < .001$) measured at Time 2. More importantly, the correlation between Time 1 learning goal orientation and Time 2 adaptability was .37 ($p < .001$). It was further proposed that proactive personality would associate positively with adaptability (Hypothesis 2). Significant positive correlations were found between Time 1 proactive personality and the CAAS subscales of concern ($r = .36, p < .001$), control ($r = .37, p < .001$), curiosity ($r = .34, p < .001$), and confidence ($r = .34, p < .001$) measured at Time 2. More importantly, the correlation between Time 1 proactive personality and Time 2 adaptability was .37 ($p < .001$).
Table 6

Measurement Model Standardized Path Coefficients.

<table>
<thead>
<tr>
<th>Item</th>
<th>Path Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Learning Goal Orientation</strong></td>
<td></td>
</tr>
<tr>
<td>A. Parcel 1</td>
<td></td>
</tr>
<tr>
<td>• When I fail to complete a difficult task, I plan to try harder the next time I work on it.</td>
<td>.91</td>
</tr>
<tr>
<td>• I try hard to improve on my past performance</td>
<td></td>
</tr>
<tr>
<td>• The opportunity to do challenging work in important to me.</td>
<td></td>
</tr>
<tr>
<td>B. Parcel 2</td>
<td></td>
</tr>
<tr>
<td>• I do my best when I’m working on a fairly difficult task.</td>
<td>.90</td>
</tr>
<tr>
<td>• When something at school isn’t working as well as it used to, I ask others for advice or help.</td>
<td></td>
</tr>
<tr>
<td>• I prefer to work on tasks that force me to learn new things.</td>
<td></td>
</tr>
<tr>
<td>C. Parcel 3</td>
<td></td>
</tr>
<tr>
<td>• When it becomes harder for me to get the same results at school, I keep trying harder until I can do it as well as before.</td>
<td>.76</td>
</tr>
<tr>
<td>• The opportunity to learn new things is important to me</td>
<td></td>
</tr>
<tr>
<td><strong>Proactive Personality</strong></td>
<td></td>
</tr>
<tr>
<td>A. Parcel 1</td>
<td></td>
</tr>
<tr>
<td>• I excel at identifying opportunities.</td>
<td>.90</td>
</tr>
<tr>
<td>• If I see something I don’t like, I fix it.</td>
<td></td>
</tr>
<tr>
<td>• Wherever I have been, I have been a powerful force for constructive change.</td>
<td></td>
</tr>
<tr>
<td>B. Parcel 2</td>
<td></td>
</tr>
<tr>
<td>• If I believe in an idea, no obstacle will prevent me from making it happen.</td>
<td>.86</td>
</tr>
<tr>
<td>• Nothing is more exciting for me than seeing my ideas turn into reality.</td>
<td></td>
</tr>
<tr>
<td>• I always look for better ways to do things.</td>
<td></td>
</tr>
<tr>
<td>C. Parcel 3</td>
<td></td>
</tr>
<tr>
<td>• No matter what the odds, if I believe on something I will make it happen.</td>
<td>.90</td>
</tr>
<tr>
<td>• I can spot a good opportunity long before others can.</td>
<td></td>
</tr>
<tr>
<td>• I love being a champion for my ideas, even against others’ opposition.</td>
<td></td>
</tr>
<tr>
<td>• I am constantly on the lookout for new ways to improve my life.</td>
<td></td>
</tr>
</tbody>
</table>
Career Optimism

A. Parcel 1
   • Thinking about my future business venture inspires me.
   • Thinking about my future business venture frustrates me.
     (Reverse Coded)
   • I get excited when I think about running my own business venture.

B. Parcel 2
   • I am eager to pursue my business dreams.
   • I am unsure of my future business success. (Reverse Coded)
   • Planning my future business venture is a natural activity.

C. Parcel 3
   • I understand my business-related interests.
   • I will definitely make the right decisions in my future business venture.
   • It is hard to discover the right business opportunity. (Reverse Coded)
   • It is difficult to relate my abilities to a specific business venture

Career Adaptability – Concern

A. Parcel 1
   • Preparing for the future.
   • Concerned about my career.

B. Parcel 2
   • Becoming aware of the educational and career choices that I must make.
   • Thinking about what my future will be like.

C. Parcel 3
   • Planning how to achieve my goals.
   • Realizing that today’s choices shape my future.

Career Adaptability – Control

A. Parcel 1
   • Sticking up for my beliefs.
   • Keeping upbeat.

B. Parcel 2
   • Counting on myself.
   • Making decisions by myself.
C. Parcel 3
  • Doing what’s right for me.
  • Taking responsibility for my actions.  .84

Career Adaptability – Curiosity

A. Parcel 1
  • Observing different ways of doing things.
  • Exploring my surroundings.  .77

B. Parcel 2
  • Looking for opportunities to grow as a person.
  • Probing deeply into questions I have.  .80

C. Parcel 3
  • Becoming curious about new opportunities.
  • Investigating options before making a choice  .88

Career Adaptability – Confidence

A. Parcel 1
  • Overcoming obstacles.
  • Performing tasks efficiently.  .87

B. Parcel 2
  • Working up to my ability.
  • Learning new skills.  .86

C. Parcel 3
  • Solving problems.
  • Taking care to do things well.  .88

Note. N = 447. All loadings are standardized.
Table 7

Confirmatory Factor Analyses Model Fit Indices of Measurement Model.

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>df</th>
<th>$\chi^2$/df</th>
<th>CFI</th>
<th>TLI</th>
<th>SRMR</th>
<th>RMSEA</th>
<th>$\chi^2$ diff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1:</td>
<td>477.84</td>
<td>182</td>
<td>2.63</td>
<td>.95</td>
<td>.95</td>
<td>.18</td>
<td>.06</td>
<td>-</td>
</tr>
<tr>
<td>Two Factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 2:</td>
<td>290.31</td>
<td>179</td>
<td>1.62</td>
<td>.98</td>
<td>.98</td>
<td>.03</td>
<td>.04</td>
<td>187.53***</td>
</tr>
<tr>
<td>Four Factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: $\chi^2$ = difference between observed and obtained covariance matrix; $\chi^2$/df = the difference in $\chi^2$ from the previous (more parsimonious) model; CFI = comparative fit index; TLI = Tucker-Lewis index; SRMR = standardized root mean-square residual; RMSEA = root mean square error of approximation. *** $p < .001$
Furthermore, the correlation between Time 1 proactive personality and Time 2 adaptability was .45 ($p < .001$). We also hypothesized that career optimism would associate positively with career adaptability (Hypothesis 3). Significant positive correlations were found between Time 1 career optimism and the CAAS subscales of concern ($r = .30, p < .001$), control, ($r = .31, p < .001$), curiosity ($r = .23, p < .001$), and confidence ($r = .28, p < .001$) measured at Time 2. Similarly, the correlation between Time 1 career optimism and Time 2 adaptability was .33 ($p < .001$). This unique pattern of significant relationships also largely confirms the convergent validity of career adaptability measure with conceptually similar dispositions relevant to career development.

3.6.1. Regression Analyses

In order to further estimate the unique relationships between the career adaptability and adaptivity, a regression analyses was performed, with the total CAAS score as dependent variable, and the three dispositional measures as the independent variables. Learning goal orientation, proactive personality, and career optimism explained 26% of the variance in global career adaptability [$R^2 = .26, F (3, 446) = 51.33, p < .001$]. Learning goal orientation ($\beta = .21, p < .001$), proactive personality ($\beta = .31, p < .001$), and career optimism ($\beta = .13, p < .01$) were all significantly related career adaptability.

3.6.2. Structural Model

To test the hypothesized structural model, paths were specified from learning goal orientation, proactive personality, and career optimism to career adaptability. As shown in Table 7, the hypothesized structural model had a good fit, $\chi^2 (179, N=447) = 290.31, p < .001$, $\chi^2/df = 1.62$, CFI = .98, TLI = .98, SRMR = .03, RMSEA = .04 (CI
90%: .03 - .05). Figure 1 illustrates the significant paths from learning goal orientation to career adaptability (β=.23, p< .001), proactive personality to career adaptability (β=.34, p< .001), and career optimism to career adaptability (β=.12, p< .05). Overall, hypotheses 1 to 3 are supported.

4. Discussion

For the purpose of contributing to the understanding of career adaptability, the CAAS was validated in the Australian context and its relationship with adaptivity in terms of learning goal orientation, proactive personality, and career optimism was also examined. The present findings support both of these features and are discussed in the succeeding sections.

4.1. Psychometric properties of the Career Adapt-Abilities Scale – Australia

In line with our expectations, CAAS demonstrated sound psychometric properties and a coherent multidimensional and hierarchical structure that fits the theoretical model and linguistic explication of career adaptability resources. In the case of the means reported herein, the values are higher as compared to other CAAS validation studies because a 7-point Likert scale was adopted in the current study to reduce neutral responses and prevent loss of power (Aguinis et al., 1996; Matell & Jacoby, 1972). The overall responses, nevertheless, range from strong to very strong and are comparable to CAAS-International results. Furthermore, the current findings provide evidence of an excellent test–retest reliability of the sample's career adaptability by means of CAAS, which was found to be a stable measure over a 4-week interval between measurements. Specifically, the full scale and four subscales each demonstrate adequate to excellent internal consistency estimates (α = .83–.94) and test–retest reliabilities (r = .61–.76, p b .001) over time. Overall, the obtained reliabilities of CAAS-Australia are generally higher compared to the total international sample.
Figure 1. Structural equation model of the relationship between learning goal orientation, proactive personality, career optimism and career adaptability. Structural path estimates are standardized parameter estimates. To simplify the presentation, the measurement model has been omitted, and the correlations among the exogenous variables are not shown. *p<.05, **p<.01, ***p<.001.
The validation results were generally comparable to international CAAS findings, primarily because Australia shares similar economic and cultural characteristics with the other Western developed countries that participated in previous studies. With respect to factor loadings, the curiosity subscale (.88) is similar to the CAAS-international loading (.88) while the control subscale (.88) is slightly higher than the international sample's loading (.86). Conversely, the concern subscale's loading (.73) is slightly lower compared to the international sample's loading (.78), similar to the confidence subscale (.85), which also emerged as lower compared to the CAAS-International loading (.90). These slight loading differences may reflect some cultural boundary conditions or sample characteristics that influence the expression of career adaptability in certain contexts. Indeed, Savickas and Porfeli (2012, p. 3) noted that, “countries vary in the degree to which they prompt the formation of adaptability because they provide different opportunities and imperatives to develop and express psychosocial resources and transactional competencies.”

For instance, the observed higher loading in the control subscale may be explained by Australia's predominantly self-driven rather than institutionally constructed career pathways. According to an OECD (2002) report, Australia's “labor market is relatively open and less dependent on occupationallly-linked qualifications that young people are often able to try out a variety of jobs as part of their career maturation” (p. 3). Consequently, these factors may have reinforced young Australians' sense of responsibility to mobilize one's career (i.e., control) and their interest to actively explore career opportunities (i.e., curiosity) in their environment. However, the scarring effects of the prevailing youth job crisis and adverse labor market conditions continue to de-motivate and inflict career constraints that may have led to discourage young Australians' career concern and confidence. This discouragement from seeking work is evident in the growing number of young Australians delaying entry to or
leaving the workforce as indicated by the increasing rate of youth participation in full-time education and those not fully engaged in employment, education, or training (Foundation for Young Australians, 2013). Then again, the upward trend of participation in further education and vocational training among young Australians may also indicate adaptive readiness and ability to respond to the job crisis since gaining technical knowledge and skills increases their chances for securing a more stable and higher quality job. Simply put, these adapting behaviors may have been fostered by their higher sense of career control and curiosity as demonstrated in the current findings.

Alternatively, these differences may have been due to the sample's unique developmental and cultural characteristics. For instance, the current sample consists of university students in their early career stage hence undergoing a process of discovering their career identity, developing competencies and gaining relevant experience. Another plausible reason particularly for the observed lower career concern may be due to young people's tendency to believe in an ideal career characterized by maladaptive and unrealistic career expectations (Prideaux & Creed, 2002). Finally, high career control in the current sample reflects an independent self-construal that may have been reinforced by Australian society’s emphasis on individualistic values of autonomy and self-reliance (Hofstede, 2001). These proposed explanations, however, warrant further empirical testing. In general, the CAAS-Australia form has exemplified excellent psychometric properties and factor structure comparable to the CAAS-International validation.

4.2. Pattern of results

To test the model of career adaptation, we examined the proposed relationships between adaptivity and career adaptability. The observed pattern of significant relationships is consistent with the predictions and largely confirms the convergent validity of the CAAS. Results are also consistent with prior research on adaptive traits
using the Big Five personality dimensions, which lends empirical support to the positive link between career adaptability and openness to experience (Teixeira et al., 2012; Zacher, 2014). As predicted, adaptivity (i.e., learning goal orientation, proactive personality, and career optimism) related positively to overall career adaptability and its four dimensions (i.e., concern, control, curiosity, and confidence). The path analysis further supported the hypotheses that learning goal orientation, proactive personality, and career optimism fosters career adaptability among young people. Firstly, the pattern of relationships implies that adaptive individuals espousing a learning goal orientation tend to develop career adaptability resources given their predisposition to focus on competence development and sustain effort in the face of obstacles. In line with previous work (e.g., Creed et al., 2011; Garcia et al., 2012; Godshalk & Sosik, 2003), this finding further supports the enabling role of learning goal orientation in the development of key career competencies such as adaptability.

In the same way, the present findings support the prediction that proactive personality relates positively to career adaptability. Proactive individuals are better able to adapt successfully because of their propensity to select, create, and influence their work environment. It therefore strengthens the theoretical assumption that adaptivity along with willingness to adjust to changing conditions also entails a proactive stance, as exemplified by readiness to take action to improve one's career circumstances and prepare for imminent work-related changes (Savickas, 2013). Lastly, career optimism likewise correlated positively with career adaptability. Optimistic individuals are more adaptable given their confident future orientation and focus on strengths amidst adversity. In addition, optimists' positive expectancies enable them to demonstrate flexibility, a necessary attribute for adaptation when appraising and responding to new and uncertain situations (Aspinwall et al., 2001).
4.3. Implications for theory and practice

Results generally support the multidimensional and hierarchical nature of career adaptability thereby contributing to the growing evidence of construct validity and cross-national measurement equivalence of CAAS. It also provides preliminary empirical support for the theoretical assumption that adaptability is essentially fostered by adaptivity, which denotes readiness to respond to changing career development tasks and work conditions (Savickas & Porfeli, 2012). In this study, we have shown that adaptive readiness, as a compound trait, may also be exemplified as learning goal orientation, proactive personality, and career optimism. Aligned with Savickas' (2013) career construction model of adaptation, the findings suggest that individuals who demonstrate readiness through adaptivity are, thus, more likely to develop better career competencies in the form of adaptability resources (i.e., concern, control, curiosity, and confidence).

Furthermore, the validation of CAAS in Australia builds confidence for its usefulness as tool for researchers and practitioners who would like to quantitatively measure adaptability resources among university students. The assessment of individual adaptability competencies is a critical component of career counselling as it enables practitioners to analyze career-related needs and design interventions aimed at promoting successful adjustment to changing work conditions. Career adaptability is also increasingly becoming a vital component of career development as it facilitates the successful adjustment and proactive search for better job opportunities, which are imperative in today's dynamic career context (Klehe et al., 2012). As suggested by Savickas (2013), career adaptability resources can be further strengthened through the provisions of career interventions such as time perspective workshops that foster future orientation and planfulness (concern), information-seeking activities (curiosity), self-esteem building (confidence), and decision-making training (control).
4.4. Limitations and future research

While we have employed a temporal research design in which there was a 4-week time lag, we still cannot assume causal relationships between the adaptivity indicators (i.e., learning goal orientation, proactive personality, and career optimism) and career adaptability. Given the limited generalizability of the current findings, it would be valuable for future research to further validate CAAS and test the career adaptation model by replicating studies in diverse samples across time, geographical regions, fields of study or profession, and career stages. For instance, career adaptability in the late career context is a relevant area of future research given the rapid shift in today's workforce demographics (e.g., growth of aging workers; UN Department of Economics and Social Affairs, 2002). Specifically, career adaptability is an important competency for adult workers to successfully manage the competing work and life demands that occur with inevitable developmental decrements and environmental changes.

Additional research is also needed to elaborate the existing nomological network of career adaptability and testing the overall career adaptation model by examining related personal (e.g., coping strategies), situational (e.g., workplace support), and cultural (e.g. traditionality) variables. Despite such important avenues for further research, the initial validity and correlational evidence are sufficiently encouraging to suggest the psychometric utility of CAAS and its significant positive relations to adaptivity in the Australian context.

In conclusion, the current validation effort supports the growing literature on the utility of the Career Adapt-Abilities Scale across varied cultural contexts. The measure in its current form demonstrates strong potential for its application in career development research and intervention in Australia. Furthermore, the correlational
findings between adaptive readiness and adaptability resources, identified as important precursors of successful career adaptation, contribute to the increasing empirical evidence supporting the usefulness of the career construction model of adaptation. Indeed, the promotion of career adaptability through research and practice expands our understanding of the individual’s self-regulatory capacity to thrive amidst the complexities and uncertainties of the current career context.
References


Graduate Career Australia (2012). GradStats: Employment and salary outcomes of recent higher education graduates. Retrieved from


**Chapter 3**

**Co-author Authorization Form (Paper 2)**

*Co-author Authorisation Form*

By signing below co-authors agree to the listed publication being included in the candidate’s thesis and acknowledge that the candidate is the primary author and contributed greater than 50% of the content of the publication.

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- performed literature review and preliminary data analysis  
- developed research ideas, models, and arguments based on Career Construction Theory.  
- led research team discussion of study design and execution.  
- wrote substantial sections of the manuscript (e.g., abstract, introduction, theory, methodology, and discussion).  
- addressed co-authors and editors reviews and edited the manuscript accordingly.  
- acted as corresponding author. |
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**Co-author's Declaration (to be completed by the collaborator)**

I authorise the inclusion of this publication in the candidate’s thesis and certify that:  
- the declaration made by the candidate on the “Declaration for a thesis with publication” form correctly reflects the extent of the candidate’s contribution to this work;  
- the candidate contributed greater than 50% of the content of the publication and is the “primary author” i.e. the candidate contributed substantially to manuscript preparation and execution.

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<td>Patrick Raymund James M. Garcia</td>
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<td>Simon Lloyd D. Restubog</td>
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Chapter 3

The role of career adaptability in predicting entrepreneurial intentions: A moderated mediation model


1. Introduction

An entrepreneurial career encompasses a self-directed process of navigating through novel situations, ambiguous career trajectories, and volatile business contexts. Indeed, entrepreneurial activities hinge on personal agency as its development and actualization depend on the individual's capability to recognize and pursue opportunities (Shane, Locke, & Collins, 2003). It is therefore important to understand which personal factors facilitate or impede an individual's intention to become an entrepreneur. The role of personal factors in the development of an entrepreneurial career has been widely investigated (Rauch & Frese, 2007; Unger, Rauch, Frese, & Rosenbusch, 2011; Zacher, Biemann, Gielnik, & Frese, 2012).

Despite the growing interest in individual differences associated with entrepreneurial proclivity and engagement, there are still gaps in the literature that need to be addressed. First, several prior studies that profiled entrepreneurs primarily relied on a trait-perspective and examined global dispositions (Kickul, Gundry, Barbosa, & Whitcanack, 2009; Leutner, Ahmetoglu, Akhtar, & Chamorro-Premuzic, 2014; Zhao, Seibert, & Lumpkin, 2010). Clearly, entrepreneurship is more than just an occupation to which individuals are predisposed; it is also a goal-directed behavior influenced by complex psychological and cognitive processes. Indeed, Shook, Priem, and McGee (2003) suggested that future studies examine the integration between psychological and cognitive characteristics of the enterprising individual because these factors could
intervene in the process of business creation. Second, the literature on entrepreneurial intentions concentrates on testing for its direct determinants and ignores the underlying mechanisms and boundary conditions through which personal variables influence intentions. Research on how and why personal and situational factors lead to entrepreneurial intentions could provide insight to theory development and practical interventions for up-and-coming entrepreneurs.

To date, calls have been made for the use of alternative theories to account for the dynamic entrepreneurial process and to identify other antecedents that might explain the variance beyond that accounted for by predominant theories (Schlaegel & Koenig, 2014; Shane et al., 2003). While Career Construction Theory (Savickas, 2013) has been employed predominantly to investigate adaptation in organizational careers, research examining career adaptability in the context of entrepreneurial careers is currently missing despite the vital role of adaptive competence in business creation. Finally, most of the existing studies on early entrepreneurial career development were derived from cross-sectional data using static designs and typically examined venture creation in the context of developed economies. In view of these research gaps, we examined the role of career adaptability and the underlying mechanisms through which it facilitates proclivity towards starting a business venture.

Entrepreneurship entails adaptability because business ventures require managing trade-offs between security and risks. Guided by the career construction perspective, we view entrepreneurial career development as geared towards person–environment fit and driven by adaptation to a series of transitions and periods in the entrepreneurial process of discovering, evaluating, and exploiting opportunities (Savickas, 2013). Adaptability enables enterprising individuals to play an active role in managing their career. This sense of personal agency increases the likelihood of choosing entrepreneurship as a suitable career path. High levels of career adaptability
Figure 1. The predicted relationships between career adaptability, entrepreneurial self-efficacy, family business, and entrepreneurial intention.
gives rise to an awareness that one is capable of career planning, exerting control over career advancement, getting access to career opportunities, and forming positive expectancies despite setbacks. Along these lines, we argue that career adaptable individuals draw from their self-regulation resources to enact agentic behaviors vital in business settings, such as demonstrating career readiness indicated by entrepreneurial intention.

Entrepreneurial self-efficacy serves as the underlying mechanism linking career adaptability to entrepreneurial intention. Entrepreneurial self-efficacy pertains to the belief that one is capable of performing behaviors required to successfully implement a business venture (Krueger & Brazeal, 1994). Nascent entrepreneurs with high self-efficacy possess favorable self-perceptions in relation to their potential to succeed in business. Hence, they form stronger intentions to mobilize start-ups because they believe that they are able to surpass challenges and achieve career goals through effort and persistence (Bandura, 1989). The process of forming an intention is considered as primarily motivational (Gollwitzer, 1999) and influenced by perceptions of competence and control (Ajzen, 1991). Therefore, we expect that career adaptability resources will exert a positive influence on entrepreneurial self-efficacy, which in turn leads to stronger proclivity towards entrepreneurship. In other words, adaptable business students are more likely to form entrepreneurial intentions because they have high levels of confidence to initiate a business venture.

The literature on entrepreneurship provides ample evidence that entrepreneurial self-efficacy predicts entrepreneurial intention (Baum & Locke, 2004; Chen, Greene, & Crick, 1998; Zhao et al., 2005). Correspondingly, the role of task-specific self-efficacy is also well examined in the career adaptability literature. Prior research found support for the role of self-efficacy as a mediating mechanism underlying the relationship between career adaptability and outcomes (e.g., academic satisfaction in Duffy,
Douglass, & Autin, 2015; job search in Guan et al., 2013; Guan et al., 2014). Moreover, self-efficacy serves as an important mechanism linking distal predictors (e.g., personality traits) to intention, intensity, and frequency of job search behaviors (Boswell & Zimmerman, 2012). In sum, entrepreneurship is viewed as a viable career option when individuals believe they possess knowledge and skills essential in the attainment of desirable business outcomes.

We further posit that adaptable nascent entrepreneurs become more efficacious under favorable environmental conditions, such as having prior exposure to a family business. Specifically, socialization in an enterprising family enables the transfer and acquisition of knowledge and skills from role models (e.g., parents) which also informs one’s perceived competence in business ownership. Empirical evidence suggests that exogenous factors, such as exposure to a family business, provides access to capital that strengthens entrepreneurial self-efficacy and intention (Baron, 1998; Katz, 1992; Ward, 2004). Therefore, it is expected that the conditional indirect effect of career adaptability on entrepreneurial intention via entrepreneurial self-efficacy is moderated by prior exposure to a family business. The proposed moderated mediation model is illustrated in Figure 1.

This study makes several contributions to the entrepreneurial careers literature. First, we address the call to consider alternative theoretical perspectives and determinants of entrepreneurial intentions. Further insights into the individual-level antecedents of entrepreneurial intentions could help us determine instrumental factors in transforming potential entrepreneurs into business founders (Krueger & Brazeal, 1994). Developing intentions is mainly motivational, thus it is grounded on the agentic self's capacity for volition and direction (Bandura, 1989; Gollwitzer, 1999). By using the Career Construction Theory and examining agentic resources such as career adaptability and self-efficacy, we develop an enhanced understanding of how individuals are able to
form entrepreneurial intentions and manage their career development amidst the impending risk and uncertainty of business venturing.

The integration of career construction perspective also supports the broader use of robust theory-driven process models in entrepreneurship research (MacMillan & Katz, 1992). Unlike previously examined stable psychological traits, adaptive competence and self-efficacy pertains to a dynamic aspect of development. Because career adaptability and entrepreneurial self-efficacy are malleable psychosocial resources, it provides an opportunity for intervention and enhancement throughout the lifespan (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001; Savickas, 2013).

Second, our research model provides preliminary evidence for the applicability of Career Construction Theory in entrepreneurial careers and the integration of socio-cognitive and entrepreneurship variables contribute in the expansion of career adaptability's current nomological net. To our knowledge, this study was the first to examine the relationship between career adaptability and entrepreneurship over time among young people in a developing economy. Furthermore, we accounted for the socio-cognitive mechanism (i.e., entrepreneurial self-efficacy) and an enabling contextual condition (i.e., family business) underlying the relationship between career adaptability and entrepreneurial intentions. The examination of mechanisms and boundary conditions through which entrepreneurial intention develops sheds light to a more comprehensive representation of entrepreneurial career planning and the dynamic process of business creation. Further, we take into account the moderating role of family business, enriching the existing knowledge on the extent to which family background might influence an individual's entrepreneurial intentions (Altinay, Madanoglu, Daniele, & Lashley, 2012; Zellweger, Sieger, & Halter, 2011).

Finally, the present study addresses the methodological limitations of prior research by implementing a temporal design to account for the change process and time elements
necessary to test antecedents of intention formation in a developing country (i.e., Serbia) with unique business contingencies. In the sections that follow, we elaborate on the research context, define key constructs, discuss theoretical linkages between the study variables and conclude with specific hypotheses.

1.1. The Serbian Context

Given the economic and social relevance of entrepreneurs, it is important to understand what drives young people's intent to start a business, especially those from developing countries. Developing Eastern European countries like Serbia underwent several significant political and economic changes which pose challenges to its workforce. The national economy is struggling with low GDP per capita (below US$11,000), very high unemployment (approximately 23%), and a 50% increase in poverty (Economy Watch, 2013). Specifically, the country’s labor market weakened due to institutional changes alongside the recent global financial crisis (World Bank, 2012). To cope with these contextual career barriers, its workforce is prompted to develop and use their adaptability resources. For instance, the scarcity of job opportunities has severely affected the Serbian youth. In response to the country’s increasing poverty and unemployment rate, 85.5% of the Serbian youth expressed their interest in opening their own business (Uvalic, 2010). Entrepreneurship in Serbia is also often perceived as a means to increase income and achieve sustainable security (Stefanovic, Rankovic and Prokic, 2011). Hence, a growing number of young Serbians ventures into entrepreneurship as an alternative career path in response to the country’s persistent job insecurity and skills mismatch (Economy Watch, 2013).

Indeed, patterns of increased engagement in early entrepreneurial activity is common in developing countries with high rates of unemployment (GEM, 2013). The interest on entrepreneurial careers as a pathway towards economic development was
also reinforced by the government through the integration of stronger business training programs in vocational schools and provision of startup loans to nascent entrepreneurs (Stamatović, Zakić, Marković, & Stamatović, 2012). Taken together, Serbia was selected as a research context primarily because entrepreneurship is increasingly becoming an alternative career choice among the youth. The risk inherent in entrepreneurial careers and the uncertainty associated with Serbia’s transition both reinforce self-driven career adaptation.

1.2. Career adaptability and entrepreneurial intentions

Career adaptability constitutes self-regulatory strengths that individuals rely on to manage vocational developmental tasks and to direct their career development. It is comprised of four adaptive behaviors that are used proactively (e.g., imminent developmental task or transition) or reactively (e.g., in response to unexpected challenges) to prepare for or cope with current and anticipated career-related changes and tasks associated with one's occupational role (Savickas & Porfeli, 2012). Career concern pertains to a time perspective towards preparation for the future such as developing a career vision. Career control reflects a sense of ownership and responsibility to exert influence on one's career. Career curiosity refers to interest in exploring possible selves and opportunities in one's environment. Lastly, career confidence pertains to the persistent pursuit of aspirations and anticipation of success in the face of obstacles. These transactional and psychosocial resources are a set of career competencies individuals use to navigate successfully through unfamiliar and complex environments.

The ability to engage in self-regulation during a business development process is vital for entrepreneurial entrance (Patel & Thatcher, 2012). Unlike traditional career pathways, the entrepreneur's business is closely intertwined involving a higher degree of
personal commitment, self-direction, and tolerance of uncertainty. Therefore, business ventures require substantial human capital resources such as career adaptability. Career Construction Theory suggests that adaptability resources facilitate the regulation of career goals and behaviors (Savickas, 2013). It is a human capital of accumulated career competencies derived from the individual's education and relevant experiences.

Along these lines, we expect that a meaningful relationship exists between career adaptability and well-formed entrepreneurial intentions. This prediction is based on the notion that highly adaptable individuals possess psychological resources that make them more adept in recognizing business opportunities, mobilizing resources, leveraging uncertainty, and fitting into new circumstances as they pursue career goals. Correspondingly, prior research has profiled successful entrepreneurs as confident, persistent, and resilient despite the accompanying threats and set-backs of business ventures (Bullough, Renko, & Myatt, 2014; Hayward, Forster, Sarasvathy, & Fredrickson, 2010; Zhao, Seibert, & Hills, 2005). Thus, we predict that:

**Hypothesis 1.** Career adaptability is positively related to entrepreneurial intentions.

1.3. A moderated mediation model of entrepreneurial intentions: the role of entrepreneurial self-efficacy and family business

Under comparable conditions, not all individuals with similar competencies are able to successfully enact an entrepreneurial role (Markman & Baron, 2003). Future entrepreneurs must formulate actual intentions with a high degree of confidence and persistence to surmount obstacles (Krueger & Brazeal, 1994). Adaptive behaviors are most likely to be enacted and sustained in the entrepreneurial process when individuals possess self-efficacy beliefs to initiate business ventures. Efficacious individuals are able to set higher goals, develop better plans, sustain their effort, use feedback constructively, and persist through setbacks (Bandura, 1989). These characteristics are
vital because business ventures present ambiguous, risky, and uncertain situations where effort, persistence, and planning are important (Shane et al., 2003).

The positive relationship between career adaptability and self-efficacy have been examined in the context of early career development (Hirschi, 2009) and job search success (Guan et al., 2013). Similarly, robust evidence supports the importance of self-efficacy as a socio-cognitive mechanism in entrepreneurial intent formation (Chen, Greene, & Crick, 1998; Zhao et al., 2005) and venture growth (Baum & Locke, 2004). In the current study, we argue that career adaptability can foster entrepreneurship intentions by engendering an individual's entrepreneurial self-efficacy beliefs. This argument is consistent with Liñán and Chen (2009), who suggested that human capital and other demographic behaviors could indirectly drive intentions through personal perceptions about entrepreneurial activity. According to Bird (1988), personal abilities and resources can indirectly influence entrepreneurial intentions through “intuitive, holistic, and contextual thinking” and “rational, analytic, and cause-and-effect-oriented processes” (p. 443). Hence, an individual with strong career adaptability will have more confidence in formulating a business plan, analyzing a business opportunity, and setting goals, which in turn results in a vision and a feeling of the potential value of being an entrepreneur.

Further, Savickas and Porfeli (2012) conceptualized career adaptability as a psychosocial resource shaped by contextual contingencies. Drawing upon the propositions of Career Construction Theory about early socialization, we contend that prior exposure to family enterprise strengthens entrepreneurial intent as it facilitates the internalization of roles and behaviors pivotal to proclivity towards business ownership and entrepreneurial career readiness. Elements of socialization (e.g., raising capital, establishing trust and legitimacy, building networks) are embedded in the tasks an entrepreneur must accomplish in order to be successful (Steier, 2001). Hence, prior
exposure to family business may help facilitate a successful venture as early socialization in enterprising activities develops familiarity and provides access to essential business resources (Zellweger et al., 2011).

Indeed, prior studies found that early exposure to enterprising activities in a family business context predicted entrepreneurial intent and commitment (Carr & Sequeira, 2007; Dawson, Sharma, Irving, Marcus, & Chirico, 2013). Through vicarious learning experience, individuals are exposed to business related knowledge, necessary skills for day-to-day business operations, as well as unbiased inside information that facilitates optimism about their capabilities and resources to manage business ventures of their own (Altinay et al., 2012; Zellweger et al., 2011). The preceding arguments produce an integrative framework in which entrepreneurial self-efficacy mediates the relationship between career adaptability and entrepreneurial intentions, and this mediated effect is stronger for those participants with prior exposure to family business. Stated formally, we predict that:

*Hypothesis 2. The conditional indirect effect of career adaptability on entrepreneurial intentions via entrepreneurial self-efficacy is moderated by family business, such that the mediated relationship is stronger for those who have a prior exposure to family business as opposed to those who do not have a family business.*

2. Method

2.1. Participants and procedures

Each participant received a cover page with information about the purpose of the study as well as the contact details of the researchers should they agree to fully participate and in the event participants decide to withdraw participation at any time during the research process. They were also reminded that participation is voluntary and non-participation or withdrawal from the study at any point in time would not
jeopardize their grade in class or relationship with the lecturer and university.

Participants were asked to sign the informed consent forms prior to completing the survey questionnaires, which includes demographic information and a career questionnaire (see Appendix F).

To ensure anonymity and confidentiality, participants were asked to generate an anonymous code. The anonymous code was generated by using the first two letter of their father’s first name, the last two letters of their mother’s first name, and the day of their birth. Personal information of the participants remains confidential via the unique codes they generate. Moreover, participants were assured of confidentiality as written in the information sheet and consent form. All participants provided their informed consent regarding survey participation and the study followed the ethical principles required by the Australian National University – Human Research Ethics Committee (see Appendix B).

At Time 1 of data collection, surveys were administered to 560 university students pursuing a bachelor's degree in Entrepreneurship, Management, and Commerce in Serbia. The participants received a survey packet containing demographic questions and the career adaptability questionnaire. A total of 380 completed questionnaires were returned yielding a response rate of 67.85%. This sample was used to provide validity evidence for the CAAS-Serbia. At Time 2, two months after the Time 1 data collection, same group of 380 participants were asked to answer a questionnaire assessing their entrepreneurial self-efficacy. A total of 200 surveys were retrieved yielding a response rate of 52.63%. At Time 3, two months after the Time 2 data collection, we again surveyed the remaining 200 participants and asked them to answer a questionnaire assessing their entrepreneurial intentions. We also asked the participants to report their career adaptability to provide evidence for the test–retest reliability of the CAAS scale. A total of 180 completed questionnaires were retrieved resulting in a response rate of
90%. This final sample of 180 matched responses over the three measurement periods comprised 56% males with a mean age of 24.38 years (SD = 2.82).

2.2. Measures

Survey items were presented in English because this language is spoken by a vast majority of Serbian youth and is predominantly used in educational contexts (Dearden, 2014). Unless otherwise specified, the response format for all items, excluding demographic variables, was a 7-point Likert-type scale. This response format was employed as opposed to the 5-point Likert scale used in previous CAAS studies to provide participants a wider range of response anchors to choose from and to also minimize neutral responses in the scale (Matell & Jacoby, 1972). Previous research suggests that limited response options may result in loss of power and difficulty in detecting significant effects (Aguinis, Bommer, & Pierce, 1996).

2.2.1. Career Adapt-Abilities Scale

The CAAS-International form contains 24 items that combine to yield a total score indicating career adaptability (for the items, see Savickas & Porfeli, 2012). The 24 items are divided equally into four subscales that measure the adaptability resources of concern, control, curiosity, and confidence. The item descriptive statistics and loadings from the confirmatory factor model appear in Table 1. The overall scale for the CAAS-International has a reported reliability of .92, which is higher than the subscale reliability estimates for concern (.83), control (.74), curiosity (.79), and confidence (.85) (Savickas & Porfeli, 2012). The reliabilities of the subscales for this sample appear in Table 1. Measured at Time 1, the overall scale from the CAAS-Serbia had a reliability of .95, which is higher than the subscale alphas for concern (α = .86), control (α = .86), curiosity (α = .83), and confidence (α = .84). Overall, the reliabilities are generally higher for this sample relative to the total international sample.
2.2.2. Entrepreneurial self-efficacy

Entrepreneurial self-efficacy was measured by six items from Wilson, Kickul, and Marlino (2007). The respondents were asked to rate their capabilities against their peers (1 = much worse, 7 = much better) in regards to solving problems, managing money, being creative, getting people's agreement, being a leader, and making decisions. Wilson et al. (2007) reported a Cronbach's alpha of .79. For this sample, the scale yielded a Cronbach's alpha of .73.

2.2.3. Entrepreneurial intentions

Entrepreneurial intentions were measured using a two-item scale (1 = strongly disagree, 7 = strongly agree) from Lee, Wong, Foo, and Leung (2011). Items were “I have always wanted to work for myself (i.e. self-employed)” and “If I have the opportunity, I would start my own business venture”. Lee et al. (2011) reported adequate reliability (α = .72) and convergent validity with another established measure of entrepreneurial intentions (Kolvereid, 1996; r = .79, p < .01). In this study, the scale yielded a Cronbach's alpha of .85.

2.2.4. Family business

Consistent with prior research (Zellweger et al., 2011), we asked each participant to respond to the following question: “Does your father or mother run their own business?” (0 = no, 1 = yes).

2.2.5. Control Variables

We controlled for the gender of the participants (0 = female, 1 = male) because of its influence on Time 3 entrepreneurial intentions. Evidence suggests that women are less likely to pursue entrepreneurial interests than men possibly because they think they lack the required skills (Chen et al., 1998). This may be due to fewer role models (i.e., most
entrepreneurs are men) and less exposure to early career experiences related to entrepreneurship (Dyer, 1994).

3. Results

3.1. Descriptive statistics and correlations of the CAAS-Serbia form

The CAAS-Serbia item means and standard deviations suggest that the responses ranged from strong to very strong (M =5.11 to 5.66). Skewness and kurtosis values for the 24 CAAS-Serbia items ranged from −.86 to −.24 and −.56 to .82 respectively suggesting that the items conform to the assumptions of confirmatory factor analysis for this sample. Item means, standard deviations, and factor loadings for CAAS-Serbia items and scales appear in Table 1. Skewness and kurtosis values for the four CAAS-Serbia subscales ranged from −.75 to −.46 and −.56 to .22 respectively. These values suggest that the subscales conform to the assumptions of correlation-based statistics for this sample. As shown in Table 2, correlations among the adaptability subscales and the adaptability total score ranged from .71 to .92 and were all significant (p < .001).

3.2. Confirmatory factor analysis

A confirmatory factory analysis was performed using AMOS® 20 for Windows (Amos Development Corporation, Spring House, PA, USA) program with maximum likelihood (ML) estimation procedure. Assessment of model goodness-of-fit is evaluated based on the amount of discrepancy between the implied covariance matrix and the observed covariance matrix. In this study, multiple indices from each fit class (e.g., absolute, parsimony, and comparative) were considered to test model adequacy and to supplement the commonly used chi-square statistic as it is heavily influenced by sample size, normality, and model complexity (Brown, 2006). Guided by the suggestions provided by Hu and Bentler (1999), a good fitting model is determined
Table 1

Career adapt-abilities scale: items, descriptive statistics, standardized loadings, and internal consistency reliabilities in the overall sample.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Item (first-order indicators)</th>
<th>Mean</th>
<th>SD</th>
<th>Loading</th>
<th>α</th>
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<td><strong>Concern</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td>1.</td>
<td>Thinking about what my future will be like</td>
<td>5.11</td>
<td>1.33</td>
<td>.62</td>
<td>.86</td>
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<td>2.</td>
<td>Realizing that today’s choices shape my future</td>
<td>5.12</td>
<td>1.17</td>
<td>.77</td>
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<td>3.</td>
<td>Preparing for the future</td>
<td>5.11</td>
<td>1.18</td>
<td>.76</td>
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<tr>
<td>4.</td>
<td>Becoming aware of the educational and career choices that I must make</td>
<td>5.23</td>
<td>1.08</td>
<td>.70</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Planning how to achieve my goals</td>
<td>5.23</td>
<td>1.13</td>
<td>.76</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Concerned about my career</td>
<td>5.17</td>
<td>1.20</td>
<td>.65</td>
<td></td>
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<td><strong>Control</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Keeping upbeat</td>
<td>5.26</td>
<td>1.17</td>
<td>.64</td>
<td>.86</td>
</tr>
<tr>
<td>2.</td>
<td>Making decisions by myself</td>
<td>5.36</td>
<td>1.24</td>
<td>.73</td>
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<tr>
<td>3.</td>
<td>Taking responsibility for my actions</td>
<td>5.37</td>
<td>1.14</td>
<td>.70</td>
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<td>4.</td>
<td>Sticking up for my beliefs</td>
<td>5.39</td>
<td>1.17</td>
<td>.74</td>
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</tr>
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<td>5.</td>
<td>Counting on myself</td>
<td>5.48</td>
<td>1.10</td>
<td>.71</td>
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<td>6.</td>
<td>Doing what’s right for me</td>
<td>5.47</td>
<td>1.13</td>
<td>.72</td>
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<td><strong>Curiosity</strong></td>
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<td>1.</td>
<td>Exploring my surroundings</td>
<td>5.28</td>
<td>1.10</td>
<td>.59</td>
<td>.83</td>
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<td>2.</td>
<td>Looking for opportunities to grow as a person</td>
<td>5.31</td>
<td>1.09</td>
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<td>3.</td>
<td>Investigating options before making a choice</td>
<td>5.34</td>
<td>1.10</td>
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<td>4.</td>
<td>Observing different ways of doing things</td>
<td>5.27</td>
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<td>5.</td>
<td>Probing deeply into questions I have</td>
<td>5.20</td>
<td>1.15</td>
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<td>6.</td>
<td>Becoming curious about new opportunities</td>
<td>5.36</td>
<td>1.07</td>
<td>.70</td>
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<td><strong>Confidence</strong></td>
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<td>Performing tasks efficiently</td>
<td>5.33</td>
<td>1.06</td>
<td>.67</td>
<td>.84</td>
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<td>2.</td>
<td>Taking care to do things well</td>
<td>5.43</td>
<td>1.14</td>
<td>.71</td>
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<td>3.</td>
<td>Learning new skills</td>
<td>5.59</td>
<td>1.07</td>
<td>.71</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Working up to my ability</td>
<td>5.53</td>
<td>1.03</td>
<td>.66</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Overcoming obstacles</td>
<td>5.61</td>
<td>1.05</td>
<td>.67</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Construct</th>
<th>Construct (second order indicators)</th>
<th>Mean</th>
<th>SD</th>
<th>Loading</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adaptability</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Concern</td>
<td>5.16</td>
<td>.91</td>
<td>.94</td>
<td>.95</td>
</tr>
<tr>
<td>2.</td>
<td>Control</td>
<td>5.39</td>
<td>.89</td>
<td>.97</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Curiosity</td>
<td>5.29</td>
<td>.82</td>
<td>.94</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Confidence</td>
<td>5.53</td>
<td>.81</td>
<td>.94</td>
<td></td>
</tr>
</tbody>
</table>

Note: \( N = 380 \); all of the loadings are statistically significant at \( P < .001 \).
Table 2
Correlation table of CAAS dimensions in Time 1

<table>
<thead>
<tr>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concern</td>
<td>5.16</td>
<td>.91</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>5.39</td>
<td>.89</td>
<td>.79</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curiosity</td>
<td>5.29</td>
<td>.82</td>
<td>.73</td>
<td>.76</td>
<td></td>
</tr>
<tr>
<td>Confidence</td>
<td>5.53</td>
<td>.81</td>
<td>.71</td>
<td>.77</td>
<td>.73</td>
</tr>
<tr>
<td>Career Adaptability</td>
<td>5.34</td>
<td>.77</td>
<td>.90</td>
<td>.92</td>
<td>.89</td>
</tr>
</tbody>
</table>

Note: $N = 380$; all correlations are statistically significant at $p < .001$. 
based on recommended cut-off scores for the following fit statistics: 1) a chi-square p
value of greater than .05, 2) a root mean square error of approximation (RMSEA) of
less than .06, 3) a normed chi-square ($\chi^2/df$) value of less than 3, 4) a standardized root
mean square residual (SRMR) of less than .08, and 4) a cut-off value close to .95 for
Tucker Lewis Index (TLI) and Comparative Fit Index (CFI). Although these rules of
thumb are appropriate for ML estimation procedures, researchers are cautioned to avoid
relying heavily on suggested cut-off criteria when assessing model fit (Nye & Drasgow,
2011). In addition to obtaining fit statistics close to the values recommended in the
literature, a specified model essentially requires to be likewise supported by substantive
theory. A five factor solution was supported and had a good fit with the observed data,
$\chi^2 (245, N=380) = 585.92, p<.001, \chi^2 /df = 2.93, CFI = .93, TLI = .92, SRMR = .04,$
RMSEA = .06 (CI 90%: .06 - .07).

The five factor solution obtained in this analysis is consistent with the Career
Construction Theory’s hierarchical factor structure (Savickas & Porfeli, 2012). These
results also conform adequately to established joint fit criteria (Hu & Bentler, 1999). In
addition, the five factor model was also compared against several alternative models.
Model 1 incorporated all paths onto a single factor, $\chi^2 (252, N=380) = 926.10, p<.001,$
$\chi^2 /df = .3.68, CFI = .86, TLI = .85, SRMR = .05, RMSEA = .08 (CI 90%: .08 - .09).$

Model 2 combined indicators based on the four dimensions of career adaptability (i.e.,
concern, control, curiosity, confidence), $\chi^2 (246, N=380) = 755.28, p<.001, \chi^2 /df = 3.07,$
CFI = .89, TLI = .88, SRMR = .05, RMSEA = .07 (CI 90%: .07 - .08). Results of the
chi-square difference test between the four factor model (Model 2) and the five factor
model (Model 3) suggested that the latter demonstrated the best fit ($\chi^2$ diff (1) = 169.36,
$p<.001$).

Table 3 presents a summary of the different model tests in this study.

Furthermore, the standardized path estimates of the manifest indicators ranged from .59
to .97, with all standardized path coefficients significant at p < .001 (see Table 1). The
standardized loadings also suggest that all items are strong indicators of the second-
order constructs, which are in turn strong indicators of the third order adaptability
construct.

3.3. Comparison of the CAAS-Serbia factor model to the international factor
model

Comparing the CAAS-Serbia hierarchical factor model to the model for the
CAAS-International indicated that the loadings of first-order items on the second-order
factors of adaptability were generally higher. There were a few items that had slightly
lower (curiosity #1, confidence items #3 and #6, and concern #3) loadings found in the
CAAS-International sample. As can be seen in Table 1, the second-order constructs in
the CAAS-Serbia sample obtained higher loadings overall compared to the CAAS-
International sample, with concern (CAAS-Serbia = .94; CAAS-International = .78) and
control (CAAS-Serbia = .97; CAAS-International = .86) exhibiting the greatest
difference in loading between the Serbian and international samples.

3.4. Test–retest reliability

To examine the temporal stability of the CAAS-Serbia, we calculated test–retest
reliabilities using Pearson product moment correlations based on a 4-month interval. For
this analysis, we used the final sample of 180 students with complete Time 1 and Time 3
career adaptability data. Table 4 presents estimates of internal consistency and test–
retest reliabilities for the CAAS-Serbia total score and subscales. All subscales and the
total score yielded good internal consistency reliabilities (α = .79 to .93) well above the
recommended standard of .70 (DeVellis, 2003). Similarly, test–retest reliabilities were
high for all four subscales of concern (r = .76, p < .001), control (r = .78, p < .001),
curiosity (r = .75, p < .001), and confidence (r = .69, p < .001), well above the standard
Table 3
Confirmatory Factor Analyses Model Fit Indices of Career Adapt-Abilities Scale.

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>df</th>
<th>$\chi^2$/df</th>
<th>CFI</th>
<th>TLI</th>
<th>SRMR</th>
<th>RMSEA</th>
<th>$\chi^2$ diff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1:</td>
<td>926.10</td>
<td>252</td>
<td>3.68</td>
<td>.86</td>
<td>.85</td>
<td>.05</td>
<td>.08</td>
<td>-</td>
</tr>
<tr>
<td>One Factor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 2:</td>
<td>755.28</td>
<td>246</td>
<td>3.07</td>
<td>.89</td>
<td>.88</td>
<td>.05</td>
<td>.07</td>
<td>170.82***</td>
</tr>
<tr>
<td>Four Factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 3:</td>
<td>585.92</td>
<td>245</td>
<td>2.93</td>
<td>.93</td>
<td>.92</td>
<td>.04</td>
<td>.06</td>
<td>169.36***</td>
</tr>
<tr>
<td>Five Factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: $\chi^2$ = difference between observed and obtained covariance matrix; $\chi^2$/df = the difference in $\chi^2$ from the previous (more parsimonious) model; CFI = comparative fit index; TLI = Tucker-Lewis index; SRMR = standardized root mean-square residual; RMSEA = root mean square error of approximation. *** $p < .001.$
Table 4
Means, standard deviations, internal consistency reliabilities, and correlations between dimensions of career adapt-abilities dimensions of the sub-sample over 2 time periods.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>α</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Time 1_Consider</td>
<td>5.03</td>
<td>.90</td>
<td>.82</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Time 1_Control</td>
<td>5.17</td>
<td>.91</td>
<td>.84</td>
<td>.69</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Time 1_Curiosity</td>
<td>5.08</td>
<td>.87</td>
<td>.83</td>
<td>.62</td>
<td>.70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Time 1_Confidence</td>
<td>5.32</td>
<td>.84</td>
<td>.80</td>
<td>.60</td>
<td>.67</td>
<td>.65</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Time 1_Career Adaptability</td>
<td>5.15</td>
<td>.76</td>
<td>.93</td>
<td>.85</td>
<td>.89</td>
<td>.86</td>
<td>.84</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Time 3_Consider</td>
<td>5.12</td>
<td>.87</td>
<td>.79</td>
<td>.76</td>
<td>.59</td>
<td>.49</td>
<td>.46</td>
<td>.67</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Time 3_Control</td>
<td>5.19</td>
<td>.84</td>
<td>.79</td>
<td>.69</td>
<td>.78</td>
<td>.62</td>
<td>.59</td>
<td>.78</td>
<td>.66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Time 3_Curiosity</td>
<td>5.14</td>
<td>.85</td>
<td>.81</td>
<td>.53</td>
<td>.64</td>
<td>.75</td>
<td>.55</td>
<td>.72</td>
<td>.57</td>
<td>.67</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Time 3_Confidence</td>
<td>5.41</td>
<td>.88</td>
<td>.83</td>
<td>.60</td>
<td>.60</td>
<td>.69</td>
<td>.73</td>
<td>.56</td>
<td>.71</td>
<td>.65</td>
<td>.65</td>
</tr>
<tr>
<td>10.</td>
<td>Time 3_Career Adaptability</td>
<td>5.22</td>
<td>.73</td>
<td>.93</td>
<td>.75</td>
<td>.77</td>
<td>.72</td>
<td>.67</td>
<td>.85</td>
<td>.82</td>
<td>.89</td>
<td>.85</td>
</tr>
</tbody>
</table>

Note: *N* = 180; all correlations are statistically significant at *p* < .001.
Table 5

Means, standard deviations, and correlations of the study variables.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gender</td>
<td>.71</td>
<td>2.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Time 1 career adaptability</td>
<td>5.15</td>
<td>.76</td>
<td>-.15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Time 2 entrepreneurial self-efficacy</td>
<td>4.98</td>
<td>.87</td>
<td>-.19</td>
<td>.43</td>
<td>.32***</td>
<td>.30***</td>
<td>.09</td>
</tr>
<tr>
<td>4. Family business</td>
<td>.35</td>
<td>.48</td>
<td>.07</td>
<td>.17</td>
<td>.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Time 3 entrepreneurial intentions</td>
<td>4.62</td>
<td>1.53</td>
<td>-.02</td>
<td>.30</td>
<td>.32***</td>
<td>.30***</td>
<td>.09</td>
</tr>
</tbody>
</table>

Note: N=180; * p < .05. ** p < .01. *** p < .001.
of .50 for high correlations (Cohen & Cohen, 1983). Test–retest reliability for the overall CAAS-Serbia was high and statistically significant ($r = .85, p < .001$).

3.5. Hypotheses tests

To test the predicted relationships, hierarchical multiple regression was used as the data analytic technique. Although it would have been ideal to use structural equation modelling (SEM), the sample size for this study was smaller relative to the number of parameters to be estimated, resulting in insufficient power required for structural model estimation (Westland, 2010). A larger sample size is necessary relative to the number of parameters to be estimated for sufficient information to detect relationships between constructs using SEM (Tanaka, 1987). Given this, the hypotheses were tested using the PROCESS macro developed by Hayes (2013). Descriptive statistics, zero-order correlations, and reliability coefficients of the study variables appear in Table 5.

Consistent with Hypothesis 1, career adaptability is positively related to Time 3 entrepreneurial intentions ($B = .62$, $r = .30$, $p < .001$) even after controlling for gender. Overall, Hypothesis 1 was supported. Hypothesis 2 proposed that the indirect relationship between Time 1 career adaptability and Time 3 entrepreneurial intentions through Time 2 entrepreneurial self-efficacy is stronger for those whose parents run a family business as opposed to those whose parents do not run a family business. The indirect effect between career adaptability and Time 3 entrepreneurial intentions was significant ($indirect effect = .20$; 95% bootstrap 95% CI from .09 to .36). The direct effect of career adaptability on Time 3 entrepreneurial intentions also remained significant ($direct effect = .42$, $p < .01$), indicating partial mediation.

Next, we examined whether the strength of this mediated relationship depends on the presence or absence of a family business (i.e., family business as a second stage moderator). The cross-product term (Time 2 entrepreneurial self-efficacy × family business) was significantly associated with Time 3 entrepreneurial intentions ($B = .52$, $r$
Figure 2. The interaction between Time 2 entrepreneurial self-efficacy and family business in predicting Time 3 entrepreneurial intentions.
The conditional indirect effect between Time 1 career adaptability and Time 3 entrepreneurial intentions through Time 2 entrepreneurial self-efficacy was significantly stronger for those with a family business (indirect effect = .34, SE = .10, 95% CI: .17 to .58) compared to those without a family business (indirect effect = .10, SE = .09, 95% CI: -.07 to .28). Figure 2 shows that for those participants whose families run a business, there was a stronger positive relationship between entrepreneurial self-efficacy and entrepreneurial intentions, \( t(175) = 4.71, p < .001 \), while that positive relationship was weaker for those participants without a family business, \( t(175) = .62, p = .54 \).

4. Discussion

4.1. Psychometric properties of the Career Adapt-Abilities Scale-Serbia

The CAAS-Serbia form demonstrated sound psychometric properties as indicated by its full scale and subscales' adequate to excellent internal consistency estimates. Stability as measured by test–retest reliability on a subset of sample was high over a 4-month span. In the case of the means reported herein, the values are higher as compared to other CAAS validation studies because a 7-point Likert scale was adopted in the current study to reduce neutral responses and prevent loss of power (Aguinis et al., 1996; Matell & Jacoby, 1972). A 7-point Likert scale was also used to provide participants with more response options in a multi-item scale such as CAAS (Dawes, 2008). The overall responses, nevertheless, range from strong to very strong and are comparable to CAAS-International results.

The current form demonstrates a coherent multidimensional and hierarchical structure that fits the theoretical model and linguistic explication of career adaptability resources. Our findings also contribute to the existing nomological net by providing convergent validity evidence between adaptive competencies, entrepreneurial self-
efficacy, and entrepreneurial intention formation over and above the influence of gender. It supports the theoretical assumption that career adaptability facilitates successful adjustment to developmental vocational tasks such as defining a career choice (Savickas, 2013).

As for the factor loadings, all career adaptability resources were generally higher relative to the CAAS-International sample which could be reflective of contextual boundary conditions or sample characteristics. Specifically, concern (.94) and control (.97) demonstrated the greatest difference and were salient in our sample of young Serbians. Clearly, the results suggest increased sense of personal agency in our current sample of enterprising young Serbians. This could be related to the significant historical events, particularly Serbia’s transition from a socialist to a democratic nation. Alongside these institutional changes are other environmental factors, such as economic uncertainty, that prompts the expression of career adaptability. Specifically, there exists a major skill mismatch (i.e., underemployment) in the Serbian labor market, with the supply of educated youth far exceeding the limited number of suitable employment opportunities (Prokopenko, 2008). As a result of these unfavorable market conditions, young Serbians are prompted to develop concern for their future and to increase personal responsibility in directing their career. Furthermore, high levels of career concern and control are also possibly influenced by the Serbian society’s inclination towards uncertainty avoidance (Hofstede, 2001). The current sample were likely socialized to minimize ambiguity and risks by preparing for the future and exerting control over one’s career development. As a result, the enterprising individual gains a better sense of career security and power to enact his career goals. This variation in the development and salience of career adaptability in Serbia is expected since “countries vary in the degree to which they prompt the formation of adaptability because they provide different opportunities and imperatives to develop and express psychosocial
resources and transactional competencies” (Savickas & Porfeli, 2012, p. 3). These proposed explanations and boundary conditions of career adaptation, however, warrant further empirical testing. Nevertheless, the current findings generally support the structural model of career adaptability thereby contributing to the growing evidence of construct validity and cross-national measurement equivalence of CAAS.

4.2. Pattern of results

The results provide strong support for the invaluable role of adaptability in career development. It confirms that career adaptability positively predicted entrepreneurial self-efficacy and entrepreneurial intentions over time. Career adaptability is a transactional resource that instils the will and skill to successfully manage and mobilize one's career development. It enables the resolution of complex vocational tasks and prompts occupational choice that is congruent with one's abilities and interests (Savickas, 2013). Thus, career adaptability is instrumental in entrepreneurial intention formation since it necessitates the enactment of considerable self-regulative competencies (e.g., career planning and decidedness). This finding dovetails with previous studies on organizational careers suggesting that career adaptability increases the likelihood of successful transition from school to work as indicated by better management of career concerns (Creed, Fallon, & Hood, 2009), high employability (de Guzman & Choi, 2013), job search fit (Guan et al., 2013) and career success (Tolentino, Garcia, Restubog, Bordia, & Tang, 2013; Zacher, 2014).

Career adaptability is also viewed as a human capital reflective of competencies acquired through experience and education (Savickas & Porfeli, 2012). Higher levels of adaptive competence influence entrepreneurial intent as it also improves a young entrepreneur's perceived competence and readiness to perform generic entrepreneurial tasks. Since career adaptability pertains to the perception that one possesses the
transactional resources to carry out vocational developmental tasks, it exerted a positive influence on entrepreneurial self-efficacy. This in turn informed the development of entrepreneurial intentions. Indeed, individuals who consider themselves adaptive and efficacious in performing entrepreneurial roles are more empowered to formulate well-formed business intentions.

As expected, entrepreneurial self-efficacy mediated the relationship between career adaptability and entrepreneurial intentions. This finding corroborates results from prior studies indicating the pivotal role of self-efficacy in early career decision-making (Bandura et al., 2001; Garcia, Restubog, Toledano, Tolentino, & Rafferty, 2012; Guan et al., 2013) and entrepreneurial entrance (Chen et al., 1998; Zhao et al., 2005). Indeed, the self-regulative resources inherent in career adaptability positively influence the socio-cognitive process underlying the formation of entrepreneurial intentions.

Furthermore, the significant indirect relationship is stronger for those with prior exposure to family business. There are several reasons for this finding. According to Sardeshmukh and Corbett (2011), a family business can offer firm-specific human capital (e.g. existence of role models, vicarious learning opportunities, feedback, support, and mentoring) that contributes to developing an individual's entrepreneurial intentions. The family can also be a major source of start-up capital and investment (Pistrui, Huang, Oksoy, Jing, & Welsch, 2001). As a result of the opportunities to observe and gain favorable evaluations about the benefits of running a business, especially in terms of self-esteem, job security, and perceived satisfying income, an individual becomes more motivated to engage in entrepreneurial activities (Schröder, Schmitt-Rodermund, & Arnaud, 2011). In other words, individuals with exposure to family business will have better access to resources and develop a stronger willingness to invest time and effort in running a business venture for their own (Zellweger et al., 2011). In sum, the observed pattern of relationships supporting our predictions is robust
in light of the time-lagged data collection which emphasizes the change process and time elements necessary to test antecedents of entrepreneurial intentions.

4.3. Implications for theory and practice

The growing interest in entrepreneur's beliefs and decision-making helps us understand factors that contribute to entrepreneurial activity. Our research model and findings address the gap in our knowledge of what drives entrepreneurial initiative among young people in a developing country. While macro-level research on business development in such conditions exists, we believe our study is unique in that we explored psychosocial antecedents and socio-cognitive mechanisms of entrepreneurial intentions. Indeed, adaptable and efficacious individuals are more likely to form intentions as they possess the resources to surmount business impediments.

The research findings also have important practical implications. First, the validation of CAAS builds confidence for its usefulness as a tool for researchers and practitioners who would like to quantitatively measure adaptability resources among university students and potential entrepreneurs in developing economies. The transition process to market economy in these countries can generate positive attitude towards entrepreneurship, as young citizens plan to run their own businesses to fill in the gap in the workforce (Radojevich-Kelley, 2011).

The significant role of career adaptability and entrepreneurial self-efficacy in predicting entrepreneurial intentions also confirms its utility as an aid for career decision-making and personal resource for promoting entrepreneurial proclivity. The malleable nature of career adaptability and entrepreneurial self-efficacy, unlike stable personality traits, makes it a sustainable and dynamic personal resource that can be developed over time. Career adaptability enables potential entrepreneurs to be responsive to the changing demands of business environments. Thus, we encourage
entrepreneurship educators, counsellors, and policy makers to incorporate in their programs a wide-array of developmental approaches that foster perceived competence to pursue an entrepreneurial career and adaptive readiness to thrive amidst economic challenges and business complexities.

To foster entrepreneurial intentions, program design and implementation needs to incorporate dynamic career interventions that strengthen adaptive competency and entrepreneurial self-efficacy in addition to traditional technical entrepreneurial training. For instance, USAID has partnered with the National Employment Service, ERSTE Bank and SMART Kolektiv to implement the Youth Business Serbia Program with some early success. Hundreds of budding entrepreneurs have gained access to training in business related subjects, mentorship, assistance, study tours, and funding opportunities (USAID, 2013). Entrepreneurship courses have also been incorporated into the curricula of vocational schools via the Business Innovation Program run by the Serbian Ministry of Education and Science and the Norwegian government (Ortmans, 2011). In such context, career adaptability can be developed by engaging in time perspective workshops that foster future orientation and anticipatory planning (i.e., concern); business decision making training that instils personal responsibility (i.e., control); a colloquium with entrepreneurs and job simulations that provide realistic information on entrepreneurial activities (i.e., curiosity), and occupational problem solving exercises that build self-esteem (i.e., confidence). Responsive and strategic interventions could also be developed from using CAAS as a needs assessment tool that diagnoses career development problems (e.g., indifference, indecision, unrealism, and inhibition) associated with entrepreneurial avoidance, inertness, or discontinuation.

Furthermore, young entrepreneurs can be empowered to persist in complex business environments by strengthening their entrepreneurial self-efficacy (Chen et al., 1998; Krueger & Brazeal, 1994). Authentic learning opportunities (e.g., real-life
business design and implementation) and role models (e.g., media exposure and personal interaction with successful entrepreneurs) are key experiential sources of entrepreneurial self-efficacy and should be emphasized in entrepreneurial training and development. Collectively, our study has shown that career adaptability is a vital personal resource for enacting a self-directed entrepreneurial career that hinges on self-regulative resources to navigate volatile business environments successfully.

4.4. Limitations and future research

There are a number of limitations that should be noted in light of the present findings. Current generalizability is limited to university students for whom initiating a business venture appeals as a viable career option. Prior studies have investigated predictors of entrepreneurial intentions among university students because they are a valuable group of future entrepreneurs and a focus group of entrepreneurship education (Hirschi, 2013). Correspondingly, we focused on modelling the formation of entrepreneurial intentions among university students using a careers perspective. Research evidence suggests a strong association between intention and behavior in entrepreneurship including early career intent as a good predictor of entrepreneurial behavior (Trice, 1991). We do acknowledge, however, that not all individuals will act upon these intentions formed early in their career until they have acquired a sufficient level of mastery to launch a business venture (Boyd & Vozikis, 1994). As such, future research could examine the salience of career adaptability among entrepreneurs in various stages of the entrepreneurial process. For instance, future studies could examine the role of career adaptability in entrepreneurial re-entry and continuance since individual attributes associated with occupational choice are also relevant for career persistence.
Another interesting area of future research is examining adaptation among episodic entrepreneurs as well as those transitioning between entrepreneurial and organizational careers. Indeed, Savickas (2013) noted that the formation and use of career adaptability is bounded by economic, societal, and institutional conditions. Our study only accounted for prior exposure to family business as a contextual resource. We encourage future studies to explore other boundary conditions (e.g., societal norms, state regulations, economic reforms) that promote or constrain the influence of career adaptability in initiating business ventures. A better understanding of career adaptation in entrepreneurship can be gained from examining the development and implementation of adaptive competencies across career stages, cultural settings, and varying phases of business ventures.
References


Chapter 4

Co-author Authorization Form (Paper 3)

Co-author Authorisation Form

By signing below co-authors agree to the listed publication being included in the candidate’s thesis and acknowledge that the candidate is the primary author and contributed greater than 50% of the content of the publication.

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The candidate/primary author contributed greater than 50% of the content of the publication and was responsible for the following:
- performed literature review, survey questionnaire and codebook preparation, data analysis and interpretation.
- developed research ideas, models, and arguments based on Career Construction Theory.
- led research team discussion of study design and execution.
- wrote substantial sections of the manuscript (e.g., abstract, introduction, theory, results and discussion)
- addressed co-authors and editors reviews and edited the manuscript accordingly.
- acted as corresponding author.

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**Co-author’s Declaration (to be completed by the collaborator)**

I authorise the inclusion of this publication in the candidate’s thesis and certify that:
- the declaration made by the candidate on the “Declaration for a thesis with publication” form correctly reflects the extent of the candidate’s contribution to this work;
- the candidate contributed greater than 50% of the content of the publication and is the “primary author” i.e. the candidate contributed substantially to manuscript preparation and execution.

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Chapter 4

Validation of the Career Adapt-Abilities Scale and an Examination of a Model of Career Adaptation in the Philippine Context


1. Introduction

The Career Adapt-Abilities Scale (CAAS) is a 24-item instrument designed to measure the psychosocial construct of career adaptability in different countries. Each of the four subscales has six items which measure the adapt-ability resources of concern, control, curiosity, and confidence. Existing validation work spanning across 18 countries demonstrated the scale's excellent reliability and cross-national measurement equivalence (Savickas & Porfeli, 2012). However, further validation studies are necessary because “countries vary in the degree to which they prompt the formation of adaptability because they provide different opportunities and imperatives to develop and express psychosocial resources and transactional competencies” (Savickas & Porfeli, 2012, p.3).

Accordingly, this paper aims to contribute to this line of work by examining the construct validity of CAAS along with the fit of its multi-dimensional and hierarchical model in a non-Western context such as the Philippines. This ongoing development in career adaptability research also provides an opportunity for elaborating its nomological network in various contexts. Thus, the current study investigates the relationship of career adaptability with other elements in the overall model of career adaptation. The model states that higher levels of adaptation (outcome) are expected for those who are willing (adaptivity) and able (adaptability) to perform fitting behaviors (adapting) that address changing conditions (Savickas & Porfeli, 2012).
This study examined the relationship between adaptivity (willingness) and adaptability (able), with the expectation that individuals who are more willing to adapt their behaviors will have developed more competencies or adapt-abilities. In this study, adaptivity is operationally defined as tenacious goal pursuit and flexible goal adjustment. Furthermore, we also examined the relationship between adaptivity and adaptability with the adaptation outcomes of career satisfaction and promotability.

As a set of transactional competencies, it is important to describe the contextual contingencies that prompt the development of adapt-ability resources. Thus, the succeeding section provides a brief description of the Philippine work context, where pertinent issues such as economic uncertainty and underemployment emphasize the relevance of career adaptability.

1.1. The Philippine context

The Philippines, with a burgeoning population of roughly 95 million, has a competitive and globalized workforce (United Nations Statistics Division, 2011). Unlike most developed countries confronted with an aging workforce, the country has a growing working age population of 64 million (National Statistics Office, 2013). The Philippines has shown relative resilience during the global economic crisis, compared to its neighboring countries in the ASEAN region, because of the high remittances coming from its large expatriate workforce. This steady recovery is also demonstrated by an increase in labor participation and upward employment trend in its industries (e.g., construction, manufacturing, hospitality, professional and business services; Bureau of Labour and Employment Statistics, 2013).

Despite this promising economic growth, the Philippines remains vulnerable as it confronts perennial labor issues as well as impending labor market changes and economic crisis (Son & San Andres, 2009). Specifically, the poor quality of within-
country employment (e.g., lower wages and longer work hours), as indicated by surging underemployment rate and prevailing job-skills mismatch, remain a pressing concern of the growing Filipino workforce (Sugiyarto, 2007). Youth unemployment persists and young Filipinos (age 15 to 24 years) still comprise more than half of the country’s jobless sector (Philippine Statistical Authority, 2014). Hence, the research focuses on a subsample of Filipino university students because they face imminent threats of unemployment and underemployment as they transition to enter the workforce. The research also examines the career adaptability of Filipino employees because job insecurity and underemployment remains a prominent career concern for this group. Recent national surveys indicate that more employed Filipinos continue to express strong desire to obtain multiple jobs and additional working hours in order to increase their income and meet higher living standards (National Statistics Office, 2013).

The growing workforce is also struggling to secure local jobs that are commensurate to their skills and qualifications. As a result, a large portion professional and skilled Filipino workers seek employment opportunities outside the Philippines because of fierce competition, inadequacy of sufficient remuneration, and scarcity of new jobs within the country (International Labour Organization, 2014). Overall, these environmental conditions influence an individual’s adaptability by either promoting or constraining career-related resources or options.

The uncertainties instigated by the economic situation and competitive employment conditions in turn influence Filipinos’ construal of careers. In the Philippine context, the high regard for family ties and desire for economic mobility primarily shape how individuals enact their careers (Salazar-Clemena, 2002). For instance, early career decisions are associated with active parental involvement (Garcia, Restubog, Toledano, Tolentino, & Rafferty, 2012; Restubog, Florentino, & Garcia, 2010) and occupational choices are influenced by the desire for economic improvement more than achieving fit
and self-actualization (Watts & Fretwell, 2004). As in other developing countries, most workers in the Philippines cannot afford to remain unemployed hence they take on any job that could sustain a living (Sugiyarto, 2007). Career exploration hence is geared towards finding any job that satisfies basic needs rather than searching for options to find a better fitting job and establish a fulfilling career. Then again to break through the country's prevailing labor issues, the workforce needs to be equipped with resources that enables it to cope and sustain a career in face of disruptions brought about by economic stress or personal circumstances. The more the country's workforce opens up to global competition, the more it needs to ensure that it is ready to adapt to the demands of the constantly evolving work context.

1.2. Career adaptability

More than ever, adaptability is an essential competency as today's workers confront frequent transitions and less definable prospects throughout the span of their career (Hall & Mirvis, 1995; Savickas, Nota, Rossier, Dauwalder, Duarte, Guichard, et al., 2009). Career adaptability is a relevant construct as it facilitates the coping and proactive search for a better job which is imperative in the Philippine context. Specifically, it enables the search for job opportunities and creation of options to improve one's career (Klehe, Zikic, van Vianen, Koen, & Buyken, 2012). Anchored on career construction theory, career adaptability is conceptualized as a set of “attitudes, competencies, and behaviors that individuals use in fitting themselves to work that suits them” (Savickas, 2013, p.45). It is a multidimensional psychosocial construct comprised of four self-regulatory strengths that enables the individual to prepare for current and anticipated occupational changes. Career concern pertains to a time perspective towards preparation for the future such as developing a career vision. Career control indicates a sense of ownership and responsibility to exert influence on one's career. Career curiosity refers to interest in exploring possible selves and opportunities in one's environment.
Lastly, career confidence pertains to the pursuit of aspirations and anticipation of success in face of obstacles. These adapt-ability resources, as measured in the CAAS, are necessary for negotiating career transitions and achieving person–environment integration (Savickas & Porfeli, 2012).

Career construction theory posits interplay among adaptive readiness, adaptability resources, and adaptation outcomes (Savickas, 2013). To examine this overall model of career adaptation, we test the relationship of career adaptability to willingness to adapt or adaptivity in terms of tenacious goal pursuit and flexible goal adjustment as well as both of their relations to the adaptation outcomes of career satisfaction and promotability.

1.2.1. Career adaptivity and career adaptability

Career construction theory posits that adaptivity shapes the development and use of career adaptability resources (Savickas & Porfeli, 2012). In this study, we specifically use the dual-process model of assimilative and accommodative coping to conceptualize willingness to adapt (adaptivity). Specifically, the assimilative style of coping is operationalized as tenacious goal pursuit (TGP) which pertains to a “tendency to tenaciously pursue goals even in the face of obstacles and under high risk of failure” (Brandtstädter & Renner, 1990, p.61). Conversely, the accommodative style of coping corresponds with flexible goal adjustment which denotes a “tendency to positively reinterpret initially aversive situations and to relinquish blocked goal perspectives easily” (Brandtstädter & Renner, 1990, p.61). These coping modes, notwithstanding its divergent functions, work in complementary ways in facilitating congruence between an individual's perceived and desired conditions (Brandtstädter & Rothermund, 2002).

Both coping modes are significantly and positively associated with psychological attributes such as life satisfaction, optimism, self-acceptance, and
happiness (Brandtstadter & Renner, 1990; Mueller & Kim, 2004). Essentially, the
dynamic interplay and balance between the two approaches is relevant to adaptivity
(Brandtstadter, 2009), and thus should relate to adaptability and adaptation outcomes.
The rationale for using coping modes to measure adaptivity is drawn from the idea that
these dual coping processes motivate willingness to change and prompt the
implementation of adapt-ability resources. Conceptually, assimilative attempts are
contingent on perceived control while accommodative efforts are exerted towards
regaining influence over life's circumstances. In line with Savickas' (2013) theory of
career construction, the theoretical underpinnings of both coping modes are anchored on
self-regulation capacities of individuals to respond and adjust to life's circumstances
(Brandtstadter, 2009). More specifically, the self-determination nature of career
adaptability and assimilative tenacity (e.g., TGP) facilitates the pursuit of aspirations
despite obstacles and changes. Correspondingly, the capacity to negotiate transitions and
adjust into new circumstances inherent in career adaptability is also congruent with
positive readjustments integral in accommodative flexibility (e.g., FGA). Based on these
theoretical considerations, it is expected that tenacious goal pursuit (Hypothesis 1a) and
flexible goal adjustment (Hypothesis 1b) relate positively to career adaptability.

Hypothesis 1a: Adaptivity, in the form of tenacious goal pursuit, will be
positively related to career adaptability.

Hypothesis 1b: Adaptivity, in the form of flexible goal adjustment, will be
positively related to career adaptability.

1.2.2. Career adaptation outcomes

Adaptivity and adaptability are focal constructs in explicating career adaptation
in a continuously evolving and competitive labor market. An individual must be ready
to enact change at the same time possess psychosocial resources in order to respond
successfully to an evolving work context. In CCT, adaptation refers to the goodness of
fit indicated by success, satisfaction, and development (Savickas & Porfeli, 2012). Thus, in this study adaptation outcomes are operationalized using indicators of career success. Career success refers to an evaluative concept of accrued positive attitudinal and behavioral outcomes resulting from one’s work experiences (Seibert, Kraimer, & Liden, 2001). These positive outcomes are indicated by the individual’s subjective appraisals of career satisfaction and likelihood of promotability. Altogether, these key standards of career success have been conceptually and empirically linked with human capital variables such as cumulative educational and professional experience (Judge, Cable, Boudereau, & Bretz, 1995; Ng, Eby, Sorensen, & Feldman, 2005; Wayne, Liden, Kraimer, & Graf, 1999). As a psychosocial construct, career adaptability is also viewed as a human capital resource comprised of accumulated career competencies and knowledge. Specifically, these adapt-ability resources facilitate the capacity to “solve unfamiliar, complex, and ill-defined problems presented by vocational tasks, occupational transitions, and work traumas”, thereby promoting desirable career outcomes (Savickas & Porfeli, 2012; p. 2). Drawing from these theoretical assumptions, it is expected that higher levels of adaptability is associated with higher levels of adaptation in the form of career satisfaction and promotability.

Hypothesis 2a: Career adaptability will be positively related to career satisfaction.

Hypothesis 2b: Career adaptability will be positively related to promotability.

Furthermore, adaptation outcomes are also influenced by willingness to enact change (adaptivity). Career construction theory posits that successful adaptation is enabled not only by adaptability resources but also by adaptive readiness, which acts as a stable supportive element in the overall model (Savickas, & Porfeli, 2012). Along these lines, a meaningful relationship is expected to exist between adaptivity, adaptability, and career adaptation in terms of satisfaction and promotability. This
prediction is based on conceptual implications that individuals who are willing and able
to adapt are more likely to generate options, fit into new circumstances, and achieve
career goals. Such characteristics are likely to influence career advancement and
satisfaction. Drawing from these assumptions, it is predicted that increased willingness
to adapt in the form of tenacious goal pursuit and flexible goal adjustment relates with
higher levels of career satisfaction and promotability.

Hypothesis 2c: Adaptivity, in the form of tenacious goal pursuit, will be positively
related to career satisfaction.

Hypothesis 2d: Adaptivity, in the form of tenacious goal pursuit, will be positively
related to promotability.

Hypothesis 2e: Adaptivity, in the form of flexible goal adjustment, will be positively
related to career satisfaction.

Hypothesis 2f: Adaptivity, in the form of flexible goal adjustment, will be positively
related to promotability.

1.2.3. Mediated Model of Career Adaptation

Without clear proximal mechanisms, adaptive willingness alone may not
necessarily translate to actual adaptation. Adaptation can only be successful if adequate
repertoire of resources is available. Along similar lines, Savickas (2013) posited that
self-regulation resources in the form of career adaptability are necessary to achieve a
desirable adaptation outcome in face of demanding occupational tasks or career
transitions. These self-regulatory competencies are reflective of one’s personal agency
to respond and prepare for work-related changes. Career adaptability is comprised of
self-regulatory competencies (e.g., concern, curiosity, control, and confidence) which
specifically aid the development and use of strategies that guides one’s adapting
behaviors toward a particular career goal. As argued earlier, individuals who are more
adaptive demonstrate assimilative and accommodative coping tendencies, as indicated by TGP and FGA that prompt the development of adaptability resources. This in turn promotes successful adaptation in the form of career satisfaction and promotability. Hence, career adaptability may act as an intervening variable that accounts for the positive relationship between adaptivity and adaptation outcomes. Overall, career adaptability is expected to act as a mechanism for facilitating and achieving successful adaptation outcomes for individuals who demonstrate willingness to adapt (Savickas & Porfeli, 2012). Thus, it is hypothesized that:

_Hypothesis 3a: Tenacious goal pursuit will be indirectly related to career satisfaction via career adaptability._

_Hypothesis 3b: Tenacious goal pursuit will be indirectly related to promotability via career adaptability._

_Hypothesis 3c: Flexible goal adjustment will be indirectly related to career satisfaction via career adaptability._

_Hypothesis 3d: Flexible goal adjustment will be indirectly related to promotability via career adaptability._

1.3 Research Aims

While the CAAS international form demonstrated excellent reliability and cross-national measurement equivalence (Savickas & Porfeli, 2012), its validity for use in the Philippine context requires further psychometric analyses. In the research reported here, we analyzed the psychometric properties of the CAAS-Philippines form using both university students and employee samples. In addition, we compare the factor structure of the CAAS-Philippines to the multi-dimensional, hierarchical measurement model of the CAAS-International Form. Finally, the observed relationships between career adaptability, adaptivity (e.g., tenacious goal pursuit and flexible goal adjustment), and
adaptation outcomes (e.g., career satisfaction and promotability) are also reported to provide convergent validity evidence and test the overall model of career adaptation.

2. Method

2.1. Participants and procedures

2.1.1. Sample 1

Participants included 289 undergraduate university students from management courses at a large private university in the Philippines. The sample comprised 57% females with a mean age of 18.64 years (SD = 1.97) and 40.80% of them are in the final year of their undergraduate program. Of the 289 student participants, 26% are studying Design and Arts, 50% in Hotel, Restaurant, and Institution Management, and 24% in Education.

2.1.2. Sample 2

Participants were 495 full-time employees who were enrolled in various postgraduate academic programs (e.g., business, education, engineering, and computer science) in a private university in Manila, Philippines. An inclusion criterion for survey participation is full-time employment in an organization. The industries from which the participants are employed include banking and finance (4.3%), marketing and sales (8.1%), consulting management (1.8%), manufacturing and production (13.4%), legal services (2.2%), information technology (7.1%), research and development (4.5%), health care (15.4%), governance and public service (2.8%), public relations (6.7%), education (14.2%), and hospitality services (.4%). The sample consisted of 56% females with a mean age of 31.71 (SD = 9.73) years and an average organizational tenure of 5.18 (SD = 5.54) years. More than half of the respondents are single (58%) while others are married (32%), living together but not married (8%), or a widow/widower (1%).
reported average number of children is .96 (SD = 1.44) and financially dependent children is .72 (SD = 1.16).

2.1.3 Procedure

An information letter about the research and a request to administer survey questionnaires in class was distributed to course lecturers in a large private university in Manila, Philippines. Upon gaining their consent, the researcher administered the survey kit during class time. Each potential respondent received a cover page with information about the purpose of the study as well as the contact details of the researcher should they agree to participate and in the event participants decide to withdraw participation at any time during the research process. They were also reminded that participation is voluntary and non-participation or withdrawal from the study at any point in time would not jeopardize their grade in class or relationship with the lecturer and university. Participants were asked to sign the informed consent forms prior to completing the survey questionnaires.

Each participant received a survey kit which includes demographic information and career questionnaire (see Appendix G). To ensure anonymity and confidentiality, participants were asked to generate an anonymous code. The anonymous code was generated by using the first two letter of their father’s first name, the last two letters of their mother’s first name, and the day of their birth. Personal information of the participants remains confidential via the unique codes they generate. Moreover, participants were assured of confidentiality as written in the information sheet and consent form. All participants provided their informed consent regarding survey participation. The study followed the ethical principles required by the Australian National University – Human Research Ethics Committee upon completion, participants were instructed to return the surveys in a sealed envelope directly to the researcher via mail using a self-addressed, postage-paid return envelope. In exchange for their
participation, each participant earned an extra class credit. The researcher’s previous experience suggests that inducements such as these encourage participants to participate and contribute to a positive impression about the research project. A total of 300 surveys were administered to the student sample and 500 surveys to the employee sample. Out of these, 289 student-career questionnaires and 495 employee-career questionnaires were returned yielding a response rate of 96% and 99%, respectively. The questionnaires obtained from 11 respondents from Sample 1 and 5 respondents from Sample 2 were excluded because they either failed to provide an anonymous code, failed to complete the questionnaires, or did not fulfil the inclusion criteria of the study.

2.2. Measures

Survey items were presented in English because this language is spoken by a vast majority of the Filipino population and is predominantly used in educational contexts (Bernardo, 2004). Multi-item scales were used to ensure adequate measurement of each study variable. Unless otherwise specified, the response format for all items, excluding demographic variables, was a 7-point Likert-type scale (1 = strongly disagree; 7 = strongly agree). This response format was employed as opposed to the 5-point Likert scale used in previous CAAS studies to provide participants a wider range of response anchors to choose from and to also minimize neutral responses in the scale (Matell & Jacoby, 1972). Previous research suggests that limited response options may result in loss of power and difficulty in detecting significant effects (Aguinis, Bommer, & Pierce, 1996).

2.2.1. Career Adapt-Abilities Scale (Savickas & Porfeli, 2012)

The CAAS-International form contains 24 items that combine to yield a total score indicating career adaptability (for the items, see Savickas & Porfeli, 2012). The 24 items are divided equally into four subscales that measure the adaptability resources of
concern, control, curiosity, and confidence. Participants responded to each item indicating the extent to which they have developed abilities to build their careers using a 7-point Likert-type scale ranging from 1 (not strong) to 7 (strongest). Sample items for each subscale include, “Becoming aware of the educational and career choices that I must make (Concern)”, “Taking responsibility for my actions (Control)”, “Becoming curious about new opportunities (Curiosity)”, and “Working up to my ability (Confidence).”

The item descriptive statistics and loadings from the confirmatory factor model for Samples 1 and 2 appear in Tables 1 and 2, respectively. The overall scale for the CAAS-International has a reported reliability of .92, which is higher than the subscale reliability estimates for concern (.83), control (.74), curiosity (.79), and confidence (.85) (Savickas & Porfeli, 2012). The reliabilities of the subscales for Samples 1 and 2 appear in Tables 1 and 2, respectively. For Sample 1, the overall scale from the CAAS-Philippines had a reliability of .96, which is higher than the subscale alphas for concern (α = .91), control (α = .87), curiosity (α = .90), and confidence (α = .91). Similarly for Sample 2, the overall scale from the CAAS Philippines had a reliability of .97, which is higher than the subscale alphas for concern (α = .92), control (α = .89), curiosity (α = .91), and confidence (α = .93). Overall, the reliabilities are generally higher for the two Philippine samples (both student and employee) relative to the total international sample.

2.2.2. Tenacious goal pursuit / flexible goal adjustment (Mueller & Kim, 2004)

Tenacious goal pursuit and flexible goal adjustment were measured using two scales with 15 items each. Participants were asked to indicate how strongly they agreed with statements such as: “I stick to my goals and projects even in face of great difficulties” (tenacious goal pursuit), and “After a serious setback, I soon turn to new
tasks” (flexible goal adjustment). The internal consistencies were .79 for tenacious goal pursuit and .83 for flexible goal adjustment in Sample 1 and .77 for tenacious goal pursuit and .80 for flexible goal adjustment in Sample 2.

2.2.3. Career satisfaction (Greenhaus, Parasuraman, & Wormley, 1990)

Career satisfaction in Sample 2 was measured using a 5-item scale. Participants were asked to rate the extent to which they agreed with statements such as: “I am satisfied with the success I have achieved in my career” and “I am satisfied with the progress I have made toward meeting my career goals”. Internal consistency for this scale in this sample was .94.

2.2.4. Promotability (Wayne, Liden, Graf, & Ferris, 1997)

Promotability in Sample 2 was measured using 4-items developed by Wayne, Liden, Graf, and Ferris (1997). Participants were asked to rate the extent to which they believe they will be promoted to a higher job position level. Sample items include “I am likely to be promoted to a higher level position in this organization” and “If my supervisor has to select a successor for his/her position, it would be me.” Prior work reported a reliability estimate of .87 (Wayne et al., 1997). In this study, the internal consistency for this scale was .84.

2.2.5 Control Variables

Consistent with previous research (Bielby & Bielby, 1988; Cox & Nkomo, 1991; Judge & Bretz, 1994; Judge et al., 1995; Kirchmeyer, 1998; Seibert et al., 1999; Wayne et al., 1999), several control variables will be included in order to rule out alternative explanation to the study’s findings. Demographic and work-related variables such as age and tenure were controlled. Prior studies show demographic variables influence career satisfaction. For instance, age positively predicts career satisfaction
Figure 1. The predicted relationships between career adaptivity, adaptability, and adaptation outcomes.
Table 1

Career adapt-abilities scale: items, descriptive statistics, standardized loadings, and internal consistency reliabilities in Sample 1 (student sample).

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<th>Construct</th>
<th>Item (first-order indicators)</th>
<th>Mean</th>
<th>SD</th>
<th>Loading</th>
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<td><strong>Concern</strong></td>
<td>Thinking about what my future will be like</td>
<td>5.75</td>
<td>1.23</td>
<td>.71</td>
<td>.91</td>
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<td></td>
<td>Realizing that today’s choices shape my future</td>
<td>5.87</td>
<td>1.15</td>
<td>.72</td>
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<td></td>
<td>Preparing for the future</td>
<td>5.80</td>
<td>1.23</td>
<td>.76</td>
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<td></td>
<td>Becoming aware of the educational and career choices that I must make</td>
<td>5.73</td>
<td>1.16</td>
<td>.81</td>
<td></td>
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<td></td>
<td>Planning how to achieve my goals</td>
<td>5.71</td>
<td>1.18</td>
<td>.86</td>
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<tr>
<td></td>
<td>Concerned about my career</td>
<td>5.82</td>
<td>1.21</td>
<td>.79</td>
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<td><strong>Control</strong></td>
<td>Keeping upbeat</td>
<td>5.43</td>
<td>1.24</td>
<td>.68</td>
<td>.87</td>
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<td></td>
<td>Making decisions by myself</td>
<td>5.51</td>
<td>1.26</td>
<td>.75</td>
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<td></td>
<td>Taking responsibility for my actions</td>
<td>5.87</td>
<td>1.16</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sticking up for my beliefs</td>
<td>5.71</td>
<td>1.15</td>
<td>.70</td>
<td></td>
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<td></td>
<td>Counting on myself</td>
<td>5.75</td>
<td>1.07</td>
<td>.70</td>
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<td></td>
<td>Doing what’s right for me</td>
<td>5.89</td>
<td>1.02</td>
<td>.77</td>
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<td><strong>Curiosity</strong></td>
<td>Exploring my surroundings</td>
<td>5.74</td>
<td>1.21</td>
<td>.76</td>
<td>.90</td>
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<td></td>
<td>Looking for opportunities to grow as a person</td>
<td>5.89</td>
<td>1.14</td>
<td>.80</td>
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<td></td>
<td>Investigating options before making a choice</td>
<td>5.80</td>
<td>1.11</td>
<td>.82</td>
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<td></td>
<td>Observing different ways of doing things</td>
<td>5.70</td>
<td>1.12</td>
<td>.83</td>
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<td>Probing deeply into questions I have</td>
<td>5.47</td>
<td>1.09</td>
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<td></td>
<td>Becoming curious about new opportunities</td>
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<td>1.09</td>
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<tr>
<td><strong>Confidence</strong></td>
<td>Performing tasks efficiently</td>
<td>5.69</td>
<td>1.13</td>
<td>.78</td>
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<td>Taking care to do things well</td>
<td>5.78</td>
<td>1.05</td>
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<td></td>
<td>Learning new skills</td>
<td>5.90</td>
<td>1.07</td>
<td>.81</td>
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<tr>
<td></td>
<td>Working up to my ability</td>
<td>5.94</td>
<td>1.07</td>
<td>.82</td>
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</tr>
<tr>
<td></td>
<td>Overcoming obstacles</td>
<td>5.78</td>
<td>1.15</td>
<td>.75</td>
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<tr>
<td></td>
<td>Solving problems</td>
<td>5.76</td>
<td>1.12</td>
<td>.73</td>
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<th>Construct (second order indicators)</th>
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<th>α</th>
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<td>.98</td>
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<td>Control</td>
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<td>Curiosity</td>
<td>5.73</td>
<td>.93</td>
<td>.97</td>
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<td></td>
<td>Confidence</td>
<td>5.81</td>
<td>.91</td>
<td>.94</td>
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Note: N = 289; all of the loadings are statistically significant at p < .001.
Table 2

Career adapt-abilities scale: items, descriptive statistics, standardized loadings, and internal consistency reliabilities in Sample 2 (employee sample).

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<th>Construct</th>
<th>Item (first-order indicators)</th>
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<th>SD</th>
<th>Loading</th>
<th>α</th>
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<td>Concern</td>
<td>Thinking about what my future will be like</td>
<td>5.66</td>
<td>1.13</td>
<td>.76</td>
<td>.92</td>
</tr>
<tr>
<td></td>
<td>Realizing that today’s choices shape my future</td>
<td>5.72</td>
<td>1.06</td>
<td>.78</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Preparing for the future</td>
<td>5.77</td>
<td>1.12</td>
<td>.86</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Becoming aware of the educational and career choices that I must make</td>
<td>5.68</td>
<td>1.09</td>
<td>.81</td>
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</tr>
<tr>
<td></td>
<td>Planning how to achieve my goals</td>
<td>5.68</td>
<td>1.13</td>
<td>.83</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Concerned about my career</td>
<td>5.76</td>
<td>1.06</td>
<td>.75</td>
<td></td>
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<tr>
<td>Control</td>
<td>Keeping upbeat</td>
<td>5.60</td>
<td>1.08</td>
<td>.72</td>
<td>.89</td>
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<tr>
<td></td>
<td>Making decisions by myself</td>
<td>5.69</td>
<td>1.14</td>
<td>.68</td>
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<tr>
<td></td>
<td>Taking responsibility for my actions</td>
<td>5.91</td>
<td>1.02</td>
<td>.79</td>
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<tr>
<td></td>
<td>Sticking up for my beliefs</td>
<td>5.81</td>
<td>1.08</td>
<td>.75</td>
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<td></td>
<td>Counting on myself</td>
<td>5.75</td>
<td>1.05</td>
<td>.74</td>
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<tr>
<td></td>
<td>Doing what’s right for me</td>
<td>5.78</td>
<td>1.09</td>
<td>.77</td>
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<tr>
<td>Curiosity</td>
<td>Exploring my surroundings</td>
<td>5.77</td>
<td>1.03</td>
<td>.72</td>
<td>.91</td>
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<tr>
<td></td>
<td>Looking for opportunities to grow as a person</td>
<td>5.90</td>
<td>1.06</td>
<td>.83</td>
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<td></td>
<td>Investigating options before making a choice</td>
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<td></td>
<td>Observing different ways of doing things</td>
<td>5.78</td>
<td>1.08</td>
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<td>Probing deeply into questions I have</td>
<td>5.60</td>
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<td>Becoming curious about new opportunities</td>
<td>5.69</td>
<td>1.09</td>
<td>.80</td>
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<td>Performing tasks efficiently</td>
<td>5.80</td>
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<td>Taking care to do things well</td>
<td>5.82</td>
<td>1.01</td>
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<td>Learning new skills</td>
<td>5.95</td>
<td>1.04</td>
<td>.86</td>
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<td></td>
<td>Working up to my ability</td>
<td>5.89</td>
<td>1.05</td>
<td>.86</td>
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<tr>
<td></td>
<td>Overcoming obstacles</td>
<td>5.87</td>
<td>1.04</td>
<td>.83</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Solving problems</td>
<td>5.87</td>
<td>1.08</td>
<td>.77</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Construct</th>
<th>Construct (second order indicators)</th>
<th>Mean</th>
<th>SD</th>
<th>Loading</th>
<th>α</th>
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</thead>
<tbody>
<tr>
<td>Adaptability</td>
<td>Concern</td>
<td>5.71</td>
<td>.92</td>
<td>.84</td>
<td>.97</td>
</tr>
<tr>
<td></td>
<td>Control</td>
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<td>.91</td>
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<tr>
<td></td>
<td>Curiosity</td>
<td>5.76</td>
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<td>.94</td>
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<tr>
<td></td>
<td>Confidence</td>
<td>5.87</td>
<td>.90</td>
<td>.95</td>
<td></td>
</tr>
</tbody>
</table>

Note: $N = 495$; all of the loadings are statistically significant at $p < .001$. 
because career outcomes accrue over time (Cox & Nkomo, 1991). Correspondingly, organizational tenure was controlled because it is an indicator of human capital which has been found to positively predict career success outcomes in terms of career satisfaction and promotability (Judge & Bretz, 1994; Judge et al., 1995; Seibert et al., 1999; Wayne et al., 1999). Age was measured in terms of years likewise organizational tenure in terms of years spent in the organization.

3. Results

3.1. Descriptive statistics and correlations of the CAAS-Philippines form

The CAAS-Philippines item means and standard deviations for both student and employee samples suggest that the typical response was in the range of strong to very strong. Skewness and kurtosis values for the 24 CAAS-Philippines items ranged from (−1.26 to −.36) to (−.36 to 1.55) respectively for Sample 1 and from (−1.10 to −.51) to (−.02 to 1.62) respectively for Sample 2, suggesting that the items conform to the assumptions of confirmatory factor analysis for both samples. Scale means, standard deviations, and zero-order correlations for all study variables appear in Tables 3 and 4 for Samples 1 and 2 respectively. In Sample 1, skewness and kurtosis values for the four CAAS-Philippines subscales ranged from (−1.11 to −.63) to (−.36 to 2.24) respectively. In Sample 2, skewness and kurtosis values for the four CAAS-Philippines subscales ranged from (−.77 to −.49) to (−.23 to .40) respectively. These values suggest that the subscales conform to the assumptions of correlation-based statistics for this sample. Correlations among the adaptability scales were significant ($p < .001$) for both Sample 1 and Sample 2 (see Tables 3 and 4). Furthermore, the correlations between the four subscales and the adaptability total score ranged from .86 to .92 in Sample 1, and .88 to .92 in Sample 2 and were all significant ($p < .001$).
3.2. Confirmatory factor analysis of the CAAS-Philippines form

To evaluate the model fit of CAAS, a confirmatory factor analysis (CFA) was carried out using AMOS® 20 for Windows (Amos Development Corporation, Spring House, PA, USA) program with maximum likelihood (ML) estimation procedure. Assessment of model goodness-of-fit is evaluated based on the amount of discrepancy between the implied covariance matrix and the observed covariance matrix. In this study, multiple indices from each fit class (e.g., absolute, parsimony, and comparative) were considered to test model adequacy and to supplement the commonly used chi-square statistic as it is heavily influenced by sample size, normality, and model complexity (Brown, 2006).

Guided by the suggestions provided by Hu and Bentler (1999), a good fitting model is determined based on recommended cut-off scores for the following fit statistics: 1) a chi-square p value of greater than .05, 2) a root mean square error of approximation (RMSEA) of less than .06, 3) a normed chi-square ($\chi^2/df$) value of less than 3, 4) a standardized root mean square residual (SRMR) of less than .08, and 4) a cut-off value close to .95 for Tucker Lewis Index (TLI) and Comparative Fit Index (CFI). Although these rules of thumb are appropriate for ML estimation procedures, researchers are cautioned to avoid relying heavily on suggested cut-off criteria when assessing model fit (Nye & Drasgow, 2011). In addition to obtaining fit statistics close to the values recommended in the literature, a specified model essentially requires to be likewise supported by substantive theory. A five factor solution was supported and had a good fit with the observed data. For Sample 1, $\chi^2 (245, N=289) = 634.52, p<.001, \chi^2 /df =2.59$, CFI = .94, TLI = .93, SRMR = .047, RMSEA = .07 (CI 90%: .07 -.08). For Sample 2, $(243, N=495) = 864.31, p<.001, \chi^2 /df =3.56, CFI = .92, TLI = .91, SRMR = .044$, RMSEA = .07 (CI 90%: .07-.08). The five factor solution obtained in this analysis is also consistent with prior empirical research in which career adaptability was conceptualized as having a hierarchical factor structure (Savickas & Porfeli, 2012).
Table 3
Means, standard deviations, and correlations of the study variables in Sample 1 (student sample).

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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</thead>
<tbody>
<tr>
<td><strong>Career Adaptability</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.   Concern</td>
<td>5.78</td>
<td>.98</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>7.   Control</td>
<td>5.69</td>
<td>.90</td>
<td>.68***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.   Curiosity</td>
<td>5.73</td>
<td>.93</td>
<td>.74***</td>
<td>.71***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.   Confidence</td>
<td>5.81</td>
<td>.91</td>
<td>.72***</td>
<td>.69***</td>
<td>.82***</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>10.  Adaptability</td>
<td>5.75</td>
<td>.83</td>
<td>.89***</td>
<td>.86***</td>
<td>.92***</td>
<td>.90***</td>
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<tr>
<td><strong>Adaptivity</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.  Tenacious Goal Pursuit</td>
<td>4.67</td>
<td>.74</td>
<td>.39***</td>
<td>.33***</td>
<td>.27***</td>
<td>.35***</td>
<td>.38***</td>
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</tr>
<tr>
<td>12.  Flexible Goal Adjustment</td>
<td>4.77</td>
<td>.75</td>
<td>.34***</td>
<td>.38***</td>
<td>.37***</td>
<td>.34***</td>
<td>.40***</td>
<td>.46***</td>
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</table>

Note: *N* = 289; all correlations are statistically significant at *p* < .001.
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<tr>
<th>Career Adaptability</th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<td>1. Concern</td>
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</tr>
<tr>
<td>2. Control</td>
<td>5.76</td>
<td>.86</td>
<td>.73***</td>
<td></td>
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<td>3. Curiosity</td>
<td>5.76</td>
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<td>.70***</td>
<td>.77***</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4. Confidence</td>
<td>5.87</td>
<td>.90</td>
<td>.73***</td>
<td>.76***</td>
<td>.84***</td>
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<td>.88***</td>
<td>.90***</td>
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<td>.92***</td>
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<td>.72</td>
<td>.27***</td>
<td>.26***</td>
<td>.25***</td>
<td>.23***</td>
<td>.28***</td>
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<td>7. Flexible Goal Adjustment</td>
<td>4.84</td>
<td>.71</td>
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<td>.41***</td>
<td>.43***</td>
<td>.44***</td>
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<td>.40***</td>
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<tr>
<td>8. Career Satisfaction</td>
<td>5.21</td>
<td>1.18</td>
<td>.37***</td>
<td>.38***</td>
<td>.40***</td>
<td>.39***</td>
<td>.43***</td>
<td>.10*</td>
<td>.28***</td>
<td></td>
</tr>
<tr>
<td>9. Promotability</td>
<td>5.36</td>
<td>.95</td>
<td>.49***</td>
<td>.52***</td>
<td>.50***</td>
<td>.52***</td>
<td>.56***</td>
<td>.20***</td>
<td>.36***</td>
<td>.61***</td>
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</tbody>
</table>

Note: N = 495; *p<.05, **p<.01, ***p<.00
Moreover, these results from both samples conform adequately to established joint fit criteria (Hu & Bentler, 1999), although the degree of fit is slightly lower than the fit for the CAAS-International model (RMSEA = .053 and SRMR = .039; Savickas & Porfeli, 2012).

The final five factor model was also compared against several alternative models. Model 1 incorporated all paths onto a single factor, Sample 1: $\chi^2 (252, N=289) = 1195.19, p<.001, \chi^2 / df = 4.74$, CFI = .81, TLI = .79, SRMR = .064, RMSEA = .11 (CI 90%: .11 - .12) and Sample 2: $\chi^2 (252, N=495) = 2025.12, p<.001, \chi^2 / df = 8.04$, CFI = .82, TLI = .80, SRMR = .061, RMSEA = .12 (CI 90%: .11 - .12). Model 2 combined indicators based on the four dimensions of career adaptability (i.e., concern, control, curiosity, and confidence), Sample 1: $\chi^2 (246, N=289) = 730.51, p<.001, \chi^2 / df = 2.97$, CFI = .90, TLI = .89, SRMR = .046, RMSEA = .08 (CI 90%: .08 - .09) and Sample 2: $\chi^2 (246, N=495) = 1070.77, p<.001, \chi^2 / df = 4.35$, CFI = .92, TLI = .90, SRMR = .044, RMSEA = .08 (CI 90%: .08 - .09). Results of the chi-square difference test between the four factor model (Model 2) and the five factor model (Model 3) suggested that the latter demonstrated the best fit for both samples (Sample 1: $\chi^2 \text{diff (1)} = 95.99, p<.001$; Sample 2: $\chi^2 \text{diff (1)} = 206.46, p<.001$). Table 5 presents a summary of the different model tests for both samples in this study. Furthermore, the standardized path estimates of the manifest indicators ranged from .70 to .97 for Sample 1 (see Table 1) and .72 to .95 for Sample 2, with all standardized path coefficients significant at $p < .001$ (see Table 2). For both samples, the standardized loadings suggest that all items are strong indicators of the second-order constructs, which are in turn strong indicators of the third-order career adaptability construct.
3.3. Comparison of the CAAS-Philippines factor model to the international factor model

Comparing the CAAS-Philippines Sample 1 (student sample) hierarchical factor model to the model for the CAAS-International indicated that, overall, the loadings of first-order items on the second-order factors of adaptability were generally higher. There were a few items that were slightly lower (concern #3) or equal to (confidence #5 and #6) the loadings found in the CAAS-International sample. The loadings for the second-order constructs were also generally higher in this sample compared to CAAS-International with the exception of control (Philippines = .84; International = .86). Curiosity showed the greatest difference between Sample 1 of CAAS-Philippines (.97) and international sample (.88), with the international sample showing a weaker loading.

A similar pattern of results was also observed by comparing the CAAS-Philippines Sample 2 (employee sample) hierarchical factor model to the model for the CAAS-International. All the loadings of first-order items on the second-order factors of adaptability were higher for the CAAS-Philippines Sample 2 compared to the CAAS-International. The loadings for the second-order constructs were also higher in this sample compared to CAAS-International sample. Concern (Philippines = .84; International = .78) and curiosity (Philippines = .94; International = .88) showed the greatest difference between Sample 2 of CAAS-Philippines and CAAS-International sample, with the international sample showing a weaker loading.

3.4. Hypotheses tests

To test the hypothesized relationships, hierarchical multiple regression was used as the data analytic technique. Although it would have been ideal to use structural equation modelling (SEM), the sample size for this study was smaller relative to the number of parameters to be estimated, resulting in insufficient power required for
Table 5
Confirmatory Factor Analyses Model Fit Indices of CAAS for Sample 1 and 2.

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>df</th>
<th>$\chi^2$/df</th>
<th>CFI</th>
<th>TLI</th>
<th>SRMR</th>
<th>RMSEA</th>
<th>$\chi^2$ diff</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sample 1: Students (N = 289)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 1: One Factor</td>
<td>1195.19</td>
<td>252</td>
<td>4.74</td>
<td>.81</td>
<td>.79</td>
<td>.064</td>
<td>.11</td>
<td>-</td>
</tr>
<tr>
<td>Model 2: Four Factors</td>
<td>730.51</td>
<td>246</td>
<td>2.97</td>
<td>.90</td>
<td>.89</td>
<td>.046</td>
<td>.08</td>
<td>464.68***</td>
</tr>
<tr>
<td>Model 3: Five Factors</td>
<td>634.52</td>
<td>245</td>
<td>2.59</td>
<td>.94</td>
<td>.93</td>
<td>.047</td>
<td>.07</td>
<td>95.99***</td>
</tr>
<tr>
<td><strong>Sample 2: Employees (N = 495)</strong></td>
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<td></td>
</tr>
<tr>
<td>Model 1: One Factor</td>
<td>2025.12</td>
<td>252</td>
<td>8.04</td>
<td>.82</td>
<td>.80</td>
<td>.061</td>
<td>.12</td>
<td>-</td>
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<tr>
<td>Model 2: Four Factors</td>
<td>1070.77</td>
<td>246</td>
<td>4.35</td>
<td>.92</td>
<td>.90</td>
<td>.044</td>
<td>.08</td>
<td>954.35***</td>
</tr>
<tr>
<td>Model 3: Five Factors</td>
<td>864.31</td>
<td>243</td>
<td>3.56</td>
<td>.92</td>
<td>.91</td>
<td>.044</td>
<td>.07</td>
<td>206.46***</td>
</tr>
</tbody>
</table>

Note: $\chi^2$ = difference between observed and obtained covariance matrix; $\chi^2$/df = the difference in $\chi^2$ from the previous (more parsimonious) model; CFI = comparative fit index; TLI = Tucker-Lewis index; SRMR = standardized root mean-square residual; RMSEA = root mean square error of approximation. ***$p < .001$. 
structural model estimation (Westland, 2010). A larger sample size is necessary relative to the number of parameters to be estimated for sufficient information to detect relationships between constructs using SEM (Tanaka, 1987). Given this, the proposed mediated model was tested using the PROCESS macro developed by Hayes (2013).

3.4.1. Bivariate Correlation Analyses

As can be seen in Tables 3 and 4, all correlations were significant and in the expected direction. It was proposed that tenacious goal pursuit would be positively associated with adaptability (Hypothesis 1a). In Sample 1, significant positive correlations were found between tenacious goal pursuit and the CAAS subscales of concern ($r = .39, p < .001$), control ($r = .33, p < .001$), curiosity ($r = .27, p < .001$), and confidence ($r = .35, p < .001$). In Sample 2, a similar pattern of significant positive correlations were also found between tenacious goal pursuit and the CAAS subscales of concern ($r = .27, p < .001$), control ($r = .26, p < .001$), curiosity ($r = .25, p < .001$), and confidence ($r = .23, p < .001$). More importantly, the correlation between tenacious goal pursuit and overall adaptability was .38 ($p < .001$) and .28 ($p < .001$) for Samples 1 and 2, respectively.

It was also proposed that flexible goal adjustment would be positively associated with adaptability (Hypothesis 1b). In Sample 1, significant positive correlations were found between flexible goal adjustment and the CAAS subscales of concern ($r = .34, p < .001$), control ($r = .38, p < .001$), curiosity ($r = .37, p < .001$), and confidence ($r = .34, p < .001$). In Sample 2, a similar pattern of significant relationships was also found between flexible goal adjustment and the CAAS subscales of concern ($r = .43, p < .001$), control ($r = .41, p < .001$), curiosity ($r = .43, p < .001$), and confidence ($r = .44, p < .001$). Furthermore, the correlation between flexible goal adjustment and overall adaptability was .40 ($p < .001$) and .48 ($p < .001$) in Samples 1 and 2, respectively. Overall, Hypothesis 1b was supported.
In Sample 2, we predicted that career adaptability would be positively associated with career satisfaction (Hypothesis 2a) and promotability (Hypothesis 2b). As predicted, significant positive correlations were found between the adaptability subscales and career satisfaction: concern ($r = .37, p < .001$), control ($r = .38, p < .001$), curiosity ($r = .40, p < .001$), and confidence ($r = .39, p < .001$). The correlation between the total adaptability score and career satisfaction was $0.43 (p < .001)$, supporting Hypothesis 2a. Similarly, significant positive correlations were found between the adaptability subscales and promotability: concern ($r = .49, p < .001$), control ($r = .52, p < .001$), curiosity ($r = .50, p < .001$), and confidence ($r = .52, p < .001$). The correlation between the overall adaptability score and promotability was $0.56 (p < .001)$, supporting Hypothesis 2b. Furthermore, results show that adaptivity is positively associated with adaptation outcomes operationalized as career satisfaction and promotability. Indeed, tenacious goal pursuit was positively related to career satisfaction ($r = .10, p < .05$) and promotability ($r = .20, p < .001$). Thus, Hypotheses 2c and 2d were supported. Similarly, flexible goal adjustment was positively related to career satisfaction ($r = .28, p < .001$) and promotability ($r = .36, p < .001$), supporting Hypotheses 2e and 2f.

3.4.2. Simple Mediation Analyses

Hypotheses 3a to 3d proposed an indirect relationship between the adaptivity (e.g., TGP and FGA) and adaptation outcomes (e.g., career satisfaction and promotability) through career adaptability. As shown in Tables 6 and 8, the indirect effect between tenacious goal pursuit and the adaptation outcomes of career satisfaction (indirect effect: $.20, SE = .04; 95% bootstrap CI: .14 to .28$) as well as with promotability (indirect effect: $.20; SE = .03; 95% bootstrap CI: .14 to .28$) were all significant. Similarly, Tables 7 and 9 shows that the indirect effect between flexible goal adjustment and the adaptation outcomes of career satisfaction (indirect effect: $.31, SE = .05; 95% bootstrap CI: .22 to .41$) as well as with promotability (indirect effect: $.32; SE
Table 6

Simple Mediation Results for Tenacious Goal Pursuit, Career Adaptability, and Career Satisfaction.

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Model 1 Career Adaptability B (SE)</th>
<th>Model 2 Career Satisfaction B (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.00 (.01)</td>
<td>.02*** (.01)</td>
</tr>
<tr>
<td>Organizational Tenure</td>
<td>-.02 (.01)</td>
<td>-.01(.01)</td>
</tr>
<tr>
<td>Independent variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tenacious goal pursuit</td>
<td>.32*** (.05)</td>
<td>.01(.07)</td>
</tr>
<tr>
<td>Career adaptability</td>
<td>.63***(.06)</td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td>.09***</td>
<td>.21***</td>
</tr>
</tbody>
</table>

Bootstrap indirect effects on career satisfaction (through career adaptability)\(^a\)

| Tenacious goal pursuit    | .20 (.04)**                       | .14                               | .28                               |

Note: LL = lower limit; CI = confidence interval; UL = upper limit. N = 495; Unstandardized regression coefficients are reported; standard errors in parentheses. \(^a\)Bootstrap sample size = 5,000. *p < .05; **p < .01; ***p < .001.
Table 7

Simple Mediation Results for Flexible Goal Adjustment, Career Adaptability, and Career Satisfaction.

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Model 1 Career Adaptability B (SE)</th>
<th>Model 2 Career Satisfaction B (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.00 (.00)</td>
<td>.02 (.01)</td>
</tr>
<tr>
<td>Organizational Tenure</td>
<td>-.01 (.01)</td>
<td>-.01 (.01)</td>
</tr>
<tr>
<td>Independent variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexible goal adjustment</td>
<td>.54*** (.0)</td>
<td>.16 (.09)</td>
</tr>
<tr>
<td>Career adaptability</td>
<td>.57*** (.07)</td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td>.23***</td>
<td>.22***</td>
</tr>
</tbody>
</table>

Bootstrap indirect effects on career satisfaction (through career adaptability) $^a$

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B (SE)</th>
<th>LL 95% CI</th>
<th>UL 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexible goal adjustment</td>
<td>.31 (.05)***</td>
<td>.22</td>
<td>.41</td>
</tr>
</tbody>
</table>

*Note: LL = lower limit; CI = confidence interval; UL = upper limit. N = 495; Unstandardized regression coefficients are reported; standard errors in parentheses. $^a$Bootstrap sample size = 5,000. *p < .05; **p < .01; ***p < .001.
Table 8

Simple Mediation Results for Tenacious Goal Pursuit, Career Adaptability, and Promotability.

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Career</td>
<td>Promotability</td>
</tr>
<tr>
<td></td>
<td>Adapability</td>
<td>B (SE)</td>
</tr>
<tr>
<td><strong>Control variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.00 (.01)</td>
<td>.01 (.00)*</td>
</tr>
<tr>
<td>Organizational Tenure</td>
<td>.00 (.01)</td>
<td>.00 (.01)</td>
</tr>
<tr>
<td><strong>Independent variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tenacious goal pursuit</td>
<td>.32***(.05)</td>
<td>.09 (.05)</td>
</tr>
<tr>
<td>Career adaptability</td>
<td>.64***(.05)</td>
<td>.64***(.05)</td>
</tr>
<tr>
<td><strong>R²</strong></td>
<td>.09***</td>
<td>.33***</td>
</tr>
<tr>
<td><strong>Bootstrap indirect effects</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>on promotability (through career</td>
<td>B (SE)</td>
<td>LL 95% CI</td>
</tr>
<tr>
<td>adaptability)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tenacious goal pursuit</td>
<td>.20***(.03)</td>
<td>.14</td>
</tr>
</tbody>
</table>

*Note: LL = lower limit; CI = confidence interval; UL = upper limit. N = 495; Unstandardized regression coefficients are reported; standard errors in parentheses. *Bootstrap sample size = 5,000. *p < .05; **p < .01; ***p < .001.
### Table 9

Simple Mediation Results for Flexible Goal Adjustment, Career Adaptability, and Promotability.

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Career Adaptability(^a)</td>
<td>Promotability</td>
</tr>
<tr>
<td></td>
<td>(B \text{ (SE)})</td>
<td>(B \text{ (SE)})</td>
</tr>
<tr>
<td>Control variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.00 (.00)</td>
<td>.01 (.00)</td>
</tr>
<tr>
<td>Organizational Tenure</td>
<td>-.01 (.01)</td>
<td>.00 (.01)</td>
</tr>
<tr>
<td>Independent variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexible goal adjustment</td>
<td>.54*** (.05)</td>
<td>.16* (.06)</td>
</tr>
<tr>
<td>Career adaptability</td>
<td>.60*** (.05)</td>
<td></td>
</tr>
<tr>
<td>(R^2)</td>
<td>.23***</td>
<td>.33***</td>
</tr>
<tr>
<td>Bootstrap indirect effects on promotability (through career adaptability)(^a)</td>
<td>B (SE)</td>
<td>LL 95% CI</td>
</tr>
<tr>
<td>Flexible goal adjustment</td>
<td>.32*** (.04)</td>
<td>.25</td>
</tr>
</tbody>
</table>

*Note: LL = lower limit; CI = confidence interval; UL = upper limit. N = 495; Unstandardized regression coefficients are reported; standard errors in parentheses. \(^a\)Bootstrap sample size = 5,000. *\(p < .05\); **\(p < .01\); ***\(p < .001\).*
=.04; 95% bootstrap CI: .25 to .41) were all significant. However, the direct effect of flexible goal adjustment on promotability remained significant (direct effect = .16, p < .05) indicating partial mediation. Overall, hypotheses 3a to 3d are supported.

4. Discussion

4.1. Psychometric properties of the Career Adapt-Abilities Scale - Philippines

Drawing on the findings of the statistical analyses reported herein, we conclude that the CAAS-Philippines form performs similarly to the CAAS-International form in terms of psychometric properties and factor structure. The full scale and four subscales each demonstrate good to excellent internal consistency estimates and a coherent multidimensional, hierarchical structure that fits the theoretical model and linguistic explication of career adaptability resources. Data were obtained from two samples to understand if career adaptability, as a set of psychosocial and transactional competencies, is expressed differently by students and employees. The analyses, nonetheless, suggest a similar pattern of results for both samples. In the case of the means, the values reported are higher because a 7-point Likert scale was adopted in the current study to reduce neutral responses and prevent loss of power (Aguinis et al., 1996; Matell & Jacoby, 1972). The overall responses, nevertheless, range from strong to very strong and are comparable to CAAS-International results.

Examination of CAAS validation results show that both student and employee samples consistently report higher levels of the four components and global career adaptability compared with the previous CAAS international group. Indeed, “culture and context may place boundary conditions around adaptability” that prompts its formation and expression (Savickas & Porfeli, 2012, p. 3). In the case of the Philippines, prevailing labor issues such as underemployment and job-skills mismatch have placed career constraints on its workforce. Consequently, such these situational
factors may have also lead to both sample's increased career adaptability. A closer examination of the factor loadings indicate that the curiosity subscale in Sample 1 (.97) and Sample 2 (.94) showed the greatest difference from the CAAS-International sample (.88). In addition, the concern subscale (.84) in Sample 2 is also higher compared to the international sample (.78). These findings suggest that both samples have a heightened interest to explore alternative scenarios and seek various work opportunities thereby intensifying career curiosity. It likewise may have promoted the collection of personal and contextual information that are relevant for mobilizing one's career. This is consistent with national survey results reporting that a growing number of employed Filipinos continue to express strong desires to obtain multiple jobs as a means to increase income and meet higher living standards (National Statistics Office, 2013).

Correspondingly, the working sample reported higher career concern, in addition to career curiosity, in response to the unpredictability of the Philippine work context. The positive future orientation inherent in career concern are necessary to prepare for the challenges that could possibly impact one's work life (Savickas, 2013).

Alternatively, the higher levels of career adaptability reported in this research may have been due to the sample's unique characteristics. For instance, Sample 1 is composed of university students who are about to transition from school to work, hence the higher levels of career curiosity. Increased interest in exploring career opportunities also reflects normative tasks expected in early career development stages. While the working sample’s experience and increased exposure to a wide array of career tasks may explain their high concern for the future and openness to opportunities. These proposed explanations, however, warrant further empirical scrutiny.

4.2. Pattern of results

To test the model of career adaptation, we examined the proposed relationships between career adaptability, adaptivity, and adaptation. The observed pattern of
significant relationships is consistent with our expectations and largely confirms the convergent validity of CAAS. As predicted, adaptivity as indicated by TGP and FGA coping modes is positively related with overall career adaptability and its four dimensions. This finding supports the theoretical assumption that self-regulative resources such as control capacities are associated with the execution of these interrelated coping strategies (Brandstätter & Renner, 1990).

Moreover, an ocular inspection of the correlations suggests that FGA correlated stronger with career adaptability in both samples. These correlations indicate that individuals who rate themselves higher in terms of career-related self-regulative resources also have higher accommodative coping tendencies. Specifically, it suggests that career adaptable individuals are more likely to readjust their personal preferences and goal orientation in face of situational constraints and changes. The inclination towards accommodative coping in both samples may also be due to their interdependent self-construal as a result of being socialized in a collectivistic society. Accordingly, Philippine psychology literature describes the Filipino worldview as more receptive than active. This receptive mode of thinking is characterized by “acceptance of reality, openness to experience, and being intuitive… a Filipino propensity to adapt to and accept nature” (Church, 1987; p. 278). Notably, this receptive worldview of Filipinos are congruent with the accommodative nature of flexible goal adjustment.

A comparison of Samples 1 and 2's results, however, shows a notable difference between the adaptivity coping modes and career adaptability correlations. On one hand, this prominent distinction between TGP and FGA in the working sample may be attributed to age and having matured or well-established goals that had been readjusted in response to aversive life situations. On the other hand, the younger student sample may have not yet experienced significant transitions that necessitate the readjustment of goals. Being in the early career stage, they are still in the process of defining and
enacting their career goals. This pattern of relationships suggests that flexible goal adjustment may be an important marker of adaptivity in adulthood. Overall, the findings indicate that career adaptability is indeed related to adaptivity for coping and negotiating vocational tasks and transitions successfully (Savickas, 2013). Individuals who demonstrate adaptive readiness are, thus, more likely to develop career competencies in the form of adapt-abilities.

Furthermore, we predicted in Sample 2 that adaptivity and adaptability are positively associated with career adaptation outcomes. Our results support this contention. As expected, increased levels of both TGP and FGA were found to be positively associated with career satisfaction and promotability. This finding supports the theoretical assumption that increased readiness to adapt relates with higher levels of adaptation (Savickas & Porfeli, 2012). Specifically, individuals who are willing to engage in adapting behaviors feel more satisfied with their career and anticipate future advancement.

As predicted, career satisfaction likewise correlated positively with adaptability. Given that career adaptability is comprised of self-regulatory resources that enable person–environment integration, it is likely to enhance positive attitudes towards one's career thereby increasing overall satisfaction. In the same way, promotability, an indicator of career success, exhibited positive correlations with adaptability suggesting that adaptable individuals have favorable perceptions of their career advancement. Furthermore, the regression results confirm the proposed mediated relationship between adaptivity and adaptation outcomes via career adaptability, even after controlling for the effects of age and organizational tenure. Indeed, to successfully adjust to changing career conditions, individuals draw upon their self-regulation resources such as adaptability to manage occupational tasks, transitions, and traumas (Savickas, 1997). Moreover, the findings suggest that adaptation in the form of career success (e.g., career
satisfaction and promotability) is essentially driven by both adaptivity and adaptability, given that both entail the readiness and capacity to adjust to current as well impending work-related challenges.

4.3. Implications for theory and practice

Collectively, the current findings support the role of adaptability as a key competency in career management (Hall & Mirvis, 1995; Savickas et al., 2009). Results from this research indicate that adaptive readiness and adaptation results are associated with career adaptability in a theoretically meaningful way. As a whole, the correlational results can be interpreted as preliminary evidence of construct validity for the CAAS-Philippines and an examination of CCT’s overall model of career adaptation.

Findings from the employee sample suggests that career adaptability is associated with higher levels of career satisfaction and promotability. These results are particularly important in the context of human resource development (HRD) because it underscores the enabling role of psychosocial resources in promoting long-term employee career success. Adaptability represents knowledge, skills, and abilities essential to coping with career tasks, transitions, and traumas (Savickas & Porfeli, 2012). It also qualifies as a generic form of human capital resource and as a noncognitive KSAOs that is transferrable across contexts. Generic human capital resources, such as career adaptability, are considered to be most useful for adaptive firm performance during periods of rapid change and uncertainty (e.g., recession) because it can be implemented for a variety of different organizational purposes (Ployhart, Van Iddekinge, & Mac Kenzie, 2011). Hence, organizations through its HRD can capitalize on these frequent changes and uncertainties as growth opportunities for developing career adaptability and empowering employees to take an active part in mobilizing their professional advancement.
The malleable psychosocial nature of career adaptability gives HRD practitioners an opportunity to develop this capacity over time as part of a human resource investment program. This notion is also consistent with other strengths-based (e.g., psychological capital; Luthans, Avey, Avolio, Norman, & Combs, 2006) human resource initiatives aiming to promote organizational competitive advantage by empowering employees to reach their full potential. The organization could then promote mechanisms such as the formulation of human resource policies to create supportive career self-management practices in the organization (Kossek, Roberts, Fisher, Demarr, 1998). For instance, performance supervisors could also use development feedback to help subordinates learn coping behaviors and to empower them to achieve career goals. At the same time, supervisors can also promote sharing and recognition of success stories in work teams to reinforce career adaptability. Ensuring that the workplace consistently endorses adaptability through a supportive and empowering environment enables employees to achieve and sustain desired career outcomes.

Moreover, HRD could incorporate in their systems a staff training program to leverage employee career adaptability. Empirical evidence suggests that career adaptability training programs contribute to successful career transition and employment (Koen, Klehe, Van Vianen, Zikic, & Nauta, 2010; Koen, Klehe, Van Vianen, 2012). Hence, it is important that professional development practices are designed to enhance and promote higher levels of adaptability resources at work (e.g., career concern, control, curiosity and confidence). Examples include provisions of group training activities as well as personalized career coaching or professional mentoring practices that focus on contingency planning, developing positive future orientation, building personal resilience, and enhancing efficacy in adaptive career self-management.
4.4. Limitations and future research

The current study has demonstrated the CAAS-Philippines utility for both university students and working samples. Because career adaptability is a psychosocial construct, further studies are still necessary to replicate these findings across various samples (e.g., unemployed & temporary workers) and career stages (e.g., mid to late career) in order to establish generalizability to other populations and contexts. The career success outcomes measured in this study were all self-reported. Therefore, additional research is also needed to examine the link between career adaptability and other objective indicators of career success (e.g., actual promotion, professional recognitions, speed of career progression). Future research could also elaborate the existing nomological network of career adaptability by exploring its links to other individual difference factors and work outcomes. Lastly, more research on the overall model of adaptation with a specific focus on adapting strategies implemented during transitions is needed.

In conclusion, the measure in its current form appears to have strong potential for application in career development research and intervention in the Philippines. The present findings lend support for the usefulness of the CAAS-Philippines form as a useful tool for researchers and practitioners who would like to quantitatively measure adaptability resources among university students and working adults. Overall, the promotion of career adaptability through research and practice can further enhance our understanding of self-regulatory competencies that will assist individuals to navigate through transitions in an increasingly complex career context.
References


Chapter 5

General Discussion of Key Findings and Conclusions

This final chapter summarizes the key findings of the current research program. It integrates the results of the three empirical studies and discusses the implications for theory and practice. The limitations and directions for future research are also discussed. Finally, an overall conclusion of the research program is provided.

The present research program broadly aimed to elucidate the process of career adaptation by examining the relations between adaptivity, adaptability, and adaptation outcomes. In achieving this research aim, three empirical investigations were conducted to test the relationships of interest across samples of university students and working adults. The research program had five overarching objectives. First, the research provided construct validity evidence for the Career Adapt-Abilities Scale (CAAS) in varied contexts. Second, it examined the dispositional antecedents (e.g., proactive personality, learning goal orientation, and career optimism) of career adaptability. This is followed by an examination of the outcomes of career adaptability in an entrepreneurial career context. In addition, the mediating role of entrepreneurial self-efficacy in linking career adaptability and entrepreneurial intentions, as well as the moderating effect of prior exposure to family business on this mediated relationship, were further examined. Finally, the overall career adaptation model was examined by testing the mediating role of career adaptability in adaptive dispositions (e.g., tenacious goal pursuit and flexible goal adjustment) and adaptation outcomes (e.g., career satisfaction and promotability). Taken as a whole, the present findings obtained in this research largely substantiate the utility of Savickas’ (2013) career construction theory as an explanatory framework for career adaptation.
Table 1
Overview of Hypotheses and Results across Studies.

<table>
<thead>
<tr>
<th>Hypothesis Number</th>
<th>Hypothesized Relationships</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Paper 1</td>
<td>Paper 2</td>
</tr>
</tbody>
</table>

**Paper 1: Career adaptation: The relation of adaptability to goal orientation, proactive personality, and career optimism**

- **H1**: Learning goal orientation is positively related to career adaptability. ✔
- **H2**: Proactive personality is positively related to career adaptability. ✔
- **H3**: Career optimism is positively related to career adaptability. ✔

**Paper 2: The role of career adaptability in predicting entrepreneurial intentions: A moderated mediation model**

- **H1**: Career adaptability is positively related to entrepreneurial intentions. ✔
- **H2**: The conditional indirect effect of career adaptability on entrepreneurial intentions via entrepreneurial self-efficacy is moderated by family business, such that the mediated relationship is stronger for those who have prior exposure to a family business as opposed to those who do not have a family business. ✔*

**Paper 3: Validation of the Career Adapt-Abilities Scale and an examination of a model of career adaptation in the Philippine context**

- **H1a**: Adaptivity, in the form of tenacious goal pursuit, is positively related to career adaptability. ✔
- **H1b**: Adaptivity, in the form of flexible goal adjustment, is positively related to career adaptability. ✔
- **H2a**: Career adaptability is positively related to career satisfaction. ✔
- **H2b**: Career adaptability is positively related to promotability. ✔
- **H3a**: Adaptivity, in the form of tenacious goal pursuit, is positively related to career satisfaction via career adaptability. ✔
- **H3b**: Adaptivity, in the form of tenacious goal pursuit, is positively related to promotability via career adaptability. ✔
- **H3c**: Adaptivity, in the form of flexible goal adjustment, is positively related to career satisfaction via career adaptability. ✔
- **H3d**: Adaptivity, in the form of flexible goal adjustment, is positively related to promotability via career adaptability. ✔*

*Note: * partial mediation
1. Summary of Findings

Table 1 presents an overview of the research hypotheses across studies. The set of results was generally found to be supportive of the hypotheses offered in this research program. As discussed in the previous chapters of the thesis, the observed pattern of significant relationships across studies corroborates the findings of previous cross-country validation and empirical work on career adaptability (Savickas & Porfeli, 2012).

1.1. Antecedents of Career Adaptability

The studies discussed in Papers 1 and 3 (i.e., Chapters 2 and 4 respectively) tested the relationship between adaptivity and career adaptability. Consistent with CCT’s conceptualization of adaptivity (i.e., individual difference variable) as an antecedent of career adaptability, it was operationalized in this research using multiple dispositional indicators of readiness to change. Indeed, the results of Paper 1 (e.g., Hypotheses 1 to 3) and Paper 3 (e.g., Hypotheses 1a to 1b) show that adaptivity predicts career adaptability.

The relationship was confirmed by examining the dispositional antecedents of career adaptability in two ways: (1) by linking it with motivational dispositions using a sample of university students in Paper 1, and (2) by linking it with adaptive coping tendencies using a sample of university students as well as working adults in Paper 3. In accordance with the career construction model of adaptation, the observed pattern of results in these studies consistently suggest that individuals who are more willing to respond to change will have developed higher adaptability to engage in career development tasks and adjust to changing work conditions.

As expected, the findings of Paper 1 indicate that young individuals who take a more proactive, learning goal-oriented and optimistic stance on their work prospects are
more likely to become highly adaptable during the early stages of their career development. These findings are robust given the time-lag design used in this study, specifically career adaptability was measured four weeks after the adaptive dispositions (e.g., proactive personality, learning goal orientation, and career optimism). Indeed, proactive characteristics were found to be related with desirable career outcomes such as occupational commitment (Yousaf, Sanders, & Shipton, 2011) and career success (Seibert, Crant, & Kraimer, 1999). Furthermore, the current findings correspond with prior studies demonstrating that higher levels of career adaptability were associated with personality traits (e.g., openness to experience; van Vianen, Klehe, Koen, & Dries, 2012), future orientation (Zacher, 2014a; Guan et al., 2014), and positive emotional dispositions (e.g., hope and optimism; Wilkins et al., 2014) that reflect a sense of readiness to deal with career uncertainty and change.

Similarly, the findings of Paper 3 suggest that young individuals and working adults who espouse adaptive coping tendencies (e.g., tenacious goal pursuit and flexible goal adjustment) when managing their career goals are more likely to become highly adaptable. Based on the dual-process model of assimilative and accommodative coping (Brandtstadter & Renner, 1990), tenacious goal pursuit and flexible goal adjustment are conceptualized to facilitate congruence between perceived and desired life conditions. Specifically, tenacious goal pursuit denotes assimilative attempts contingent on perceived control to change circumstances to fit into one’s desired state, while flexible goal adjustment pertains to accommodative efforts to modify goals that fit into new circumstances. Indeed, the current results demonstrate that adaptive coping, such as persistent pursuit of goals and flexible disengagement from goals, renders people to strengthen their adaptability resources. This empirical evidence is consistent with previous studies that have demonstrated the positive relationship between adaptive...
coping dispositions (e.g., promotion-focused regulatory focus, van Vianen, Klehe, Koen, & Dries, 2012; control of adversity, Tian & Fan, 2014) and career adaptability.

Interestingly, further ocular inspection of the adaptive coping tendencies and comparison of its relationship with career adaptability indicates a higher correlation with flexible goal adjustment. In the present research, flexible goal adjustment appears more prominent in the working adults’ sample, which may suggest the salience of accommodative coping (i.e., approaching career constraints through personal goal adjustment; Brandtstadter & Renner, 1990) in mid to later career stages. As individuals advance in their careers, they encounter more frequent work transitions and life constraints that necessitate constant readjustment of career goals. Career construction theory likewise posits that adaptivity involves a readiness to change in response to career disequilibrium (e.g., transitions; Savickas & Porfeli, 2012).

Although the current findings provide preliminary evidence of the importance of flexible goal adjustment as a marker of adaptivity in adulthood, further empirical testing is warranted to support these speculations about the relations between dual coping tendencies and career adaptability. More specifically, the likelihood that these dual coping tendencies predict career adaptability via different psychological mechanisms (e.g., occupational commitment, work role salience) require further investigation. Despite these preliminary distinctions, the observed pattern of results thus far suggests that both goal tenacity and flexibility prompts the development of career adaptability resources among young individuals and working adults.

Taken together, the findings of Papers 1 and 3 provide robust empirical evidence for the career construction model proposition that adaptive readiness promotes the development of adaptability resources. These two components are correspondingly vital to attaining career-related goodness of fit and success.
1.2. Consequences of Career Adaptability

Individuals draw on their adaptability resources to successfully negotiate career development tasks and transitions (Savickas, 1997). Based on this premise, it can be expected that highly adaptable individuals are more ready to specify a vocational choice, as well as achieve increased career satisfaction and potential for advancement. As predicted, the findings of Paper 2 (e.g., Hypothesis 1) and Paper 3 (e.g., Hypotheses 2a to 2b) collectively supports this theoretical assumption that adaptability predicts desirable career outcomes.

Specifically in Paper 2, career adaptability was found to predict entrepreneurial intentions among business students. Moreover, findings from Paper 3 demonstrate the positive influence of career adaptability on working adults’ career satisfaction and promotability. These results are also consistent with those of other studies demonstrating the positive influence of career adaptability on employment pre-entry fit and quality (Guan et al., 2013; Koen, Klehe,& van Vianen, 2012), work engagement (Rossier et al., 2012) and professional well-being and job satisfaction (Maggiori et al., 2013). Taken together, these findings from Papers 2 and 3 provide further empirical evidence for the career construction model’s proposed relationship between adaptability resources and adaptation outcomes.

1.3. The Mediating Role of Self-Efficacy

According to the career construction theory, self-efficacy shapes the process of choosing a suitable occupation. Such that, individuals with stronger self-efficacy are more able to make vocational choices while those with weaker self-efficacy may remain indecisive about their career future (Betz & Taylor, 1994). This is because efficacious individuals are more able to set higher goals, develop better plans, sustain effort, use feedback constructively, and persist through setbacks (Bandura, 1989). Prior studies that examined self-efficacy beliefs of early career individuals have shown its pivotal
role as a socio-cognitive mechanism that facilitates career decision-making (Bandura et al., 2001; Garcia et al., 2012).

In entrepreneurial career research, empirical evidence likewise supports the positive influence of self-efficacy on entrepreneurial entrance (Chen et al., 1998; Zhao et al., 2005). Indeed, findings of Paper 2 (e.g., Hypothesis 2) demonstrated that adaptable individuals who consider themselves to be efficacious in performing entrepreneurial roles were more inclined to form intentions to pursue an entrepreneurial career path. That is, entrepreneurial self-efficacy acts as the underlying socio-cognitive mechanism that explains the relationship between career adaptability and entrepreneurial intentions. This is consistent with prior research that examined the mediating role of task-specific self-efficacy in the job search process. Specifically, the positive relationship between career adaptability and job pre-entry fit perceptions was found to be mediated by job search self-efficacy of the applicants (Guan et al., 2013).

1.4 The Moderating Role of Prior Exposure to Family Business

Furthermore, Paper 2 (e.g., Hypothesis 2) examined contextual boundary conditions to illuminate factors that strengthen the indirect relationship between career adaptability and entrepreneurial intentions. According to the career construction theory, adaptability is a psychosocial resource shaped by opportunities and imperatives imposed by the environment (Savickas & Porfeli, 2012). In line with CCT, the social cognitive perspective has also identified contextual affordances, such as family business, to facilitate career agency (Lent, Brown, & Hackett, 1994; Lent, Brown, & Hackett, 2000).

As expected, the obtained empirical evidence supports the moderating role of prior exposure to family business, which further strengthens the significant indirect relationship between career adaptability and entrepreneurial intentions via entrepreneurial self-efficacy. The present results are consistent with the
entrepreneurship literature which has shown the positive influence of family background on entrepreneurial intention formation (Altinay, Madanoglu, Daniele, & Lashley, 2012; Carr & Sequeira, 2007; Dawson, Sharma, Irving, Marcus, & Chirico, 2013; Zellweger, Sieger, & Halter, 2011). This finding also suggests that early socialization to enterprising activities through a family-owned business strengthens career adaptability resources vital to entrepreneurial career readiness.

1.5. The Overall Model of Career Adaptation

In line with Savickas’ (2013) career construction model of adaptation, a mediated relationship between the three key components (i.e., adaptivity, adaptability, and adaptation outcomes) was tested. Specifically, the model asserts that higher levels of adaptation outcomes are expected for those who demonstrate adaptive readiness and possess adaptability resources that address changing work conditions. As predicted, results of Paper 3 suggest that individuals who espouse adaptive coping tendencies (e.g., tenacious goal pursuit and flexible goal adjustment) reported higher levels of career adaptability. Those who perceive themselves to be adaptable, as indicated by stronger self-regulation resources, also reported higher levels of career satisfaction and promotability. Individual difference variables, including career adaptability, have been previously identified as an antecedent of subjective career success (Ng et al., 2005; Zacher, 2014b). In addition to subjective career success (e.g., career satisfaction), the present research contributed to this line of inquiry by also demonstrating that career adaptability predicts potential for career advancement (e.g., promotability).

Further analysis also revealed that adaptive coping tendencies positively influence adaptation outcomes of career satisfaction and promotability via career adaptability. This empirical evidence substantiates the proposed interplay between the components of the career construction model. That is, to achieve career fit and success (i.e., adaptation outcomes), the individual who is ready to change (i.e., adaptivity) must
also exercise self-regulation resources (i.e., adaptability) when tackling career
development tasks and coping with changing work conditions (Savickas, 2013).
Overall, the results of Paper 3 clarify our understanding of how adaptability resources
operate as a mediating mechanism in the process of career adaptation.

2. Theoretical Implications

This research program contributes to the careers literature in a number of
important ways. First, I established the groundwork for simultaneously testing the
components (e.g., adaptivity, adaptability, and adaptation) of the career construction
model of adaptation, thereby substantiating the usefulness of CCT as an explanatory
framework for understanding the process of successful career development. Comparison
of career adaptability across samples of students and working adults from three
countries supports the robustness of the career construction model. The overall test of
the CCT model clarified how individuals regulate their vocational behavior using
adaptability resources. Notably, the findings support the career construction assertion
that individuals are not static entities but are self-regulating agents actively shaping
their career development (Savickas, 1997; 2013; Savickas & Porfeli, 2012).

To the knowledge of the researcher, this was the first study to test the overall
model of career adaptation thereby supporting the CCT’s proposed sequential linkages
of adaptivity, adaptability, and adaptation. More specifically, career adaptability was
identified as an explanatory variable linking adaptivity to adaptation outcomes.
Therefore, it contributes to the career literature by offering an explanation for why
readiness to respond to change can be beneficial to career development. Moreover, the
current research program was able to demonstrate the link between adaptability and
significant career adaptation outcome variables consistently across early to mid-career
individuals from varied contexts.
Another important contribution is the extension of CCT’s comprehensiveness by
demonstrating its applicability in the entrepreneurial career context. In the current
research program, career adaptability was identified to enable entrepreneurial intention
formation. This relationship was also found to be mediated by entrepreneurial self-
efficacy. The delineation of the underlying mechanism that links career adaptability to
entrepreneurial intentions clarified why personal factors, such as career adaptability, can
drive intentions to engage in business ventures.

In addition, the current research also elucidated the role of contextual boundary
conditions (e.g., prior exposure to the family business) in strengthening the identified
indirect relationship. While CCT conceptualized career adaptability as a psychosocial
resource and alludes to the significance of context, it does not explicitly take into
account the role of contextual factors in its model of career adaptation. Hence, the
current research contributes by specifying the contextual condition that promotes
confidence to form entrepreneurial intentions among young people. The research also
supported the proposed psychosocial nature of career adaptability by accounting for the
role of prior exposure to family business in the tested model.

Finally, construct validation of the CAAS measure across three countries
confirmed that career adaptability is indeed a higher-order, multidimensional construct
composed of self-regulation strengths of career concern, control, curiosity, and
confidence (i.e., 4Cs). These results also indicate that the 4Cs share a common
conceptual domain, and thus, are indicators of global career adaptability.

3. Practical Implications

The primary aim of career practice (e.g., assessment, training, and intervention)
is to enable individuals to successfully explore, select, and manage occupational roles
that contribute towards the attainment of a satisfying and meaningful work life (Hartung
In line with this objective, the present findings reinforced the vital role of career adaptability as a personal resource for negotiating work-based tasks and transitions across varied career stages (e.g., university students, nascent entrepreneurs, and working adults), career pathways (e.g., organizational and entrepreneurial) and contexts (e.g., developed and developing countries). The career construction model of adaptation regards individuals as agents of their career development (Savickas, 2002). Thus, it endorses career practice that assists individuals to influence their career development consciously using adaptability resources. Collectively, the present research findings highlight the central role of adaptability resources in career self-management. The practical suggestions offered in the following sections are micro-level approaches to develop and further strengthen career adaptability.

3.1. Recommendations for Career Assessment

The validation of the Career Adapt-Abilities Scale (CAAS) in this research confirmed its generalizability and utility as a tool designed to measure adaptability to career tasks and transitions. In line with the growing validation and empirical evidence (Savickas & Porfeli, 2012), the present research’s validation of CAAS in varied contexts (e.g., Australia, Philippines, and Serbia) demonstrated further support to its cross-national measurement equivalence. Specifically, the current results confirming the stability of the hierarchical and multidimensional structure of CAAS has been replicated in three countries. Moreover, the substantive validity evidence in this research confirms the applicability of CAAS to non-Western and developing societies (e.g., Philippines), where career assessment tools predominantly tested in Western industrialized societies are often questioned or remains unexamined. The validity evidence obtained in this research suggests that practitioners who would like to measure adaptability resources quantitatively can confidently use CAAS for individuals of diverse backgrounds.
Unlike prescriptive career assessment tools used to match individuals with specific occupations, the career adaptability scale was designed to assess personal resources for negotiating career development tasks and coping with work constraints. Thus, career adaptability, as measured by CAAS, should be treated as a malleable individual characteristic that can be developed and strengthened. Therefore, it is a useful assessment tool for process-oriented approaches aligned with career construction’s focus on self-concept implementation (Savickas, 2002). The career adaptability scale provides insight regarding self-regulation capacities and is a valuable self-assessment tool for assisting individuals confronted with career concerns. Specifically, it yields information about an individual’s level of global career adaptability as well as specific self-regulation strengths (i.e., concern, control, curiosity, and confidence) for constructing one’s career. Hence, the information obtained through CAAS provides a useful starting point for individuals aiming to deepen their self-knowledge, develop career competencies, promote personal agency, and facilitate successful work adjustment (Savickas et al., 2009).

Moreover, CAAS can be used for diagnostic purposes to aid developmental career interventions. For example, it can be used as a needs assessment or profiling tool to evaluate career competencies of both young individuals transitioning from school-to-work and for working adults maintaining a career. This information could then inform the design of more responsive individual career interventions (e.g., personal coaching or counseling), personnel development training programs in organizations, and broader career development policies.

3.2. Recommendations for Career Interventions

The observed pattern of relationships in this research provides practical suggestions for designing career approaches that can assist individuals to strengthen their adaptive fitness. Findings from Papers 1 and 3 shed light on the significant
individual dispositions (e.g., proactive personality, learning goal orientation, career optimism, and adaptive coping tendencies) that improve career adaptability.

Specifically, this set of results suggests that adaptive readiness to respond to work-related changes is a necessary condition of career adaptation. Thus, career practitioners designing interventions targeted to develop adaptability resources of young people are advised to consider reinforcing motivational dispositions characterized by proactivity, a learning goal orientation, and optimism towards work prospects. This can be achieved by encouraging a growth mindset in career planning interventions. For instance, offering training that promotes feedback-seeking, reframing failure as learning opportunities, and exploring alternative work opportunities (Kozlowski et al., 2001).

Enabling individuals to develop adaptive coping tendencies (e.g., tenacious goal pursuit and flexible goal adjustment) as they tackle career goal challenges likewise prompts the development of career adaptability resources. This can be achieved by training individuals to appraise their personal adaptive capacity and identify discrepancies between their career goals and current situation when managing the amount of effort they invest in their development.

Another viable practical approach for reinforcing adaptability resources is through peer coaching, a helping relationship that facilitates mutual learning. Similar to mentoring relationships (Allen, Lentz, & Day, 2006), peer coaching can also be instrumental to successful career adjustment and advancement (Kram & Isabella, 1985). A three-step model of peer coaching (Parker, Kram, & Hall, 2014) optimizes relational resources to promote reflective learning and personal development. Specifically, this goal-directed and developmental interpersonal process involves building a relationship, creating success, and internalizing skills.

Finally, the findings across studies demonstrate that career adaptability is indeed pertinent to occupational choice formation. The positive influence of career adaptability
is carried through occupation-specific self-efficacy (e.g., entrepreneurial self-efficacy). In the context of entrepreneurial careers, interventions for nascent entrepreneurs could then focus on enhancing beliefs regarding one’s competence to engage in a business ventures by providing authentic learning opportunities. For example, engagement in business plan competitions and simulation games can help increase career confidence. In addition, the present findings demonstrate that supportive contextual conditions strengthen the influence of career adaptability on occupational choice formation. Specifically, prior exposure to family business moderated the relationship between career adaptability and entrepreneurial intentions. This puts forward the importance of access to mentorship, exposure to role models, and supportive learning environments in assisting individuals to make viable and suitable occupational choices.

4. Limitations and Directions for Future Research

A number of important limitations need to be considered in light of the present findings. First, the generalizability of results is subject to certain boundaries. That is, implications of the present findings may only apply to early and mid-career stages given that data was largely obtained from university students and working adults. Specifically, the sample of university students across three studies represents young people who are about to transition from school-to-work; a period when forming a vocational choice becomes salient.

In addition, the results of Paper 3 are applicable to working people in general since respondents were all employed full-time in different jobs from various industries. The mean age (i.e., 31.71, SD = 9.73), organizational tenure (i.e., 5.18, SD= 5.54), and marital status (i.e., 58% single) suggest that the working sample is composed of a younger cohort in their early to mid-career stages; a period when attaining career satisfaction and advancement is highly regarded. These sample characteristics should be taken into consideration when interpreting the applicability of the present results.
Another point for consideration when interpreting the results is the scope of the current research program. All studies focused on examining career adaptation to normative developmental tasks (e.g., vocational decision-making) and adjustment to predictable work-related changes. Therefore, the underlying mechanisms and conditions influencing the CCT model of adaptation tested in this research may not necessarily apply in the context of adjustment to less predictable career circumstances (e.g., sudden and unforeseen personal crises).

Furthermore, although data were collected from several countries (e.g., Australia, Philippines, and Serbia) the current research focus did not account for specific cultural factors in the model testing. Data were obtained from different contexts to extend the validity and cross-national utility of the career adaptability measure. An in-depth cross-cultural test between these countries was beyond the scope of the research program. Hence, the conceptual speculations discussed in relation to the countries’ unique contextual opportunities and imperatives still require further empirical scrutiny.

In terms of research design, a notable limitation is that causal links cannot be inferred despite implementing a temporal design in which there were at least four weeks interval between measurements of independent and dependent variables (e.g., four weeks in Paper 1 and two months in Paper 2). Therefore, the empirical evidence demonstrated in this research does not allow for definitive inferences regarding the causal link between the components of career adaptation (e.g., adaptivity, adaptability and adaptation).

The current model test also does not fully capture the malleability of career adaptability as well as the temporal aspect involved in career adaptation as implied by CCT’s theoretical propositions. In fact, the current test-retest reliability results across studies indicate the stability of career adaptability. But then, the identified stability may
also be associated with the studies’ shorter time lag and the focus on adjustment to predictable career development tasks. Additional longitudinal tests are necessary to examine the malleable nature of career adaptability.

Furthermore, the present research relied on self-report measures, which can induce common method bias that might affect the observed relationships between the applied measures (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). However, several procedural remedies have been undertaken to reduce common method bias. As suggested by Podsakoff, MacKenzie, and Podsakoff (2012), the following attempts have been implemented to reduce methodological bias in the present research: 1) the predictor, mediator, and criterion variables were separated temporally, 2) questions in the survey questionnaire were randomized, and 3) clear and easy to understand instructions and items were provided in the survey questionnaire. In addition, the survey design ensured that respondent motivation is maximized, and task difficulty was minimized to promote accurate responses. To increase the probability of accurate responses, prompts (e.g., tell us what you think) were incorporated in survey questionnaires to minimize threats to social desirability and increase self-expression.

Finally, the measures of vocational choice and career advancement in this research are based on self-perceptions. Given that the form of career advancement measured in this study is perceptual, implications provided in this research do not necessarily apply to an actual job promotion. However, the self-reported promotability in this research still offers important insight as to how career adaptability influences what is perceived to be valuable or rewarded in a particular occupation.

In addition, Paper 2 examined only the specification (e.g., entrepreneurial intentions) not the actualization (e.g., actual business venture or entrepreneurial behavior) of vocational choice. Although there exists a considerable amount of entrepreneurial career research suggesting a reasonable degree of confidence that those
who intend to be entrepreneurs are more likely to actualize business ventures (Ajzen, 1991; Krueger & Brazeal, 1994; Lee et al., 2011; Trice, 1991; Zhao et al., 2005), it is also recognized that not all individuals will act on their entrepreneurial intent until they have developed a sufficient level of mastery (Boyd & Vozikis, 1994) and acquired relevant resources to launch a business venture.

There are several important avenues through which future research may advance the contributions of the research program and address limitations of its current scope. While the present findings provided a preliminary overall test of the career construction model of adaptation, there remain two critical aspects that have not been fully accounted in the empirical investigations that warrant further research. These include the examination of the behavioral component of CCT (i.e., adapting responses) and the use of a longitudinal research design to explain intrapersonal changes in adaptability.

The CCT model pertains to adapting as behaviors that address changing work conditions (Savickas & Porfeli, 2012). In CCT’s proposed sequential linkage, adapting responses are demonstrated as a result of developing adaptive readiness and adaptability resources. Future research can draw upon a range of career management strategies (e.g., proactive, reactive, and tolerant behaviors in Griffin & Hesketh, 2005) to explicate the role of adapting responses.

This line of inquiry can be further enriched by incorporating a social cognitive career theoretical (SCCT) perspective to understanding adaptive career self-management. The recent modification in SCCT’s theoretical framework is in line with CCT’s developmental focus as it offers a complementary explication of adaptive behaviors organized by life periods and roles (Lent & Brown, 2013). For example, an adaptive response during the establishment period in one’s career entails refining interpersonal, political, and networking skills. Along these lines, the results of the current research can be extended by examining the relationship of career adaptability to
specific adapting responses at work such as upward influence tactics (Thacker & Wayne, 1995), political skill (Ferris et al., 2007), and other positioning behaviors (King, 2004).

Career adaptation is a continuous process characterized by a sequential linkage across adaptive readiness, adaptability resources, adapting responses, and adaptation outcomes (Savickas & Porfeli, 2012). Hence, data obtained from longitudinal research (e.g., diary study, repeated measures) can provide substantive evidence to support causal inferences between the different components of career adaptation. Future research may test the CCT model using a repeated longitudinal design where all variables are measured across four measurement periods. It allows one also to examine the reverse-causation effects, therefore, delineate causal directions in the model. By conducting longitudinal studies, greater confidence can be inferred from the temporal aspect and direction of CCT’s proposed sequential relationship. Moreover, an alternative causal sequence (e.g., feedback loop mechanism) explaining how prior adjustment and transitions can inform the development and expression of career adaptability resources can also be tested by employing a longitudinal research.

Future studies should also consider investigating other indicators of career success as an outcome of adaptation and testing multiple indicators (e.g., career satisfaction and promotability) similar to the present research. Savickas (2002) suggested that career success among working adults can also be demonstrated through maintenance of productive work habits and attitudes, adjustment to organizational culture, and job advancement. Aside from perceived promotability, career progression can also be assessed using objective criteria such as actual promotion, speed of career advancement, and salary increase.

Recognizing that career success does not solely depend on external criteria, future studies are directed to examine the relations of career adaptability to other
context-relevant and internal criteria. As a psychosocial resource, career adaptability is
viewed to facilitate the social integration of one’s work role (Savickas, 1997). Thus,
career adaptability may also positively influence success outcomes such as generativity
at work in midlife (Clark & Arnold, 2008; Zacher, Rosing, Henning, & Frese, 2011),
work-family balance among dual-career couples (Aryee, Srinivas, & Tan, 2005) social
reputation in collectivist cultures (Lau, Shaffer, & Au, 2007), and employability in
mobile career contexts (Eby, Butts, & Lockwood). Overall, this line of research can
help clarify and expand the current known range of meaningful career adaptation
outcomes.

To date, there is limited research linking contextual supports (e.g., spousal
support and supervisor / organizational support) to career adaptability despite its
conceptualization as a psychosocial resource. Hence, future studies may also benefit
from extending the utility of CCT model and incorporating a social cognitive lens (Lent,
Brown, & Hackett, 1994) to explain the dynamics of career adaptability in specific
occupations. For instance, it would be interesting to study adaptability in highly
competitive STEM careers (e.g., science, technology, engineering, and mathematics) by
also examining the role contextual supports in strengthening personal agency to
overcome enduring occupational challenges.

Another important area of future research is the career adaptability of special
population groups (e.g., ethnical minorities and people with disability). One of the
critical limitations of dominant career theory and research is its limited focus on groups
with “work-based privilege and volition” (Bluestein, 2011; p. 2). Hence, it would be
interesting to explore the career adaptation process of people who lack autonomous
control over their vocational choices because they have limited access to career growth
opportunities or because they are bounded by personal limitations (e.g., retirement age)
and traumas (e.g., disability) or structural (e.g., restrictive egalitarian views) career
barriers. This line of inquiry renders careers research to be more inclusive in its scope and clarify nuances in the career construction model.

Finally, incorporating other relevant theoretical lens can enrich the CCT framework, as well as address its theoretical boundaries in explaining adaptation in the face of career setbacks. For instance, the conservation of resource theory (Hobfoll, 1989) provides a lens for understanding which types of resources are pertinent for adaptive coping with stressors such as job loss. Along these lines, future studies may also refer to the life management literature and test the relationship between career adaptability and resource allocation strategies (e.g., selection, optimization, and compensation in Freund & Baltes, 1998; Baltes, Wynne, Sirabian, Krenn, de Lange, 2014). Taken together, these future research opportunities can advance and sharpen our understanding of the complex process of career adaptation.

5. Overall Conclusion

The findings of this research build on the career adaptability literature in three important ways. First, the present research expanded the range of known antecedents of career adaptability. It offered a motivational perspective to explain the relationship between adaptive dispositions (e.g., learning goal orientation, proactive personality, and career optimism) and adaptability for the early career (e.g., university students) sample. Moreover, adaptivity was also examined using the dual coping tendencies perspective for the mid-career (e.g., working adults) sample. Second, it examined the process by which career adaptability predicts entrepreneurial intentions by implicating entrepreneurial self-efficacy as an underlying socio-cognitive mechanism. In addition, it examined the moderating role of prior exposure to family business in the proposed mediated relationship thereby highlighting the vital role of contextual boundary conditions. Third, it provided an overall test of the career adaptation model by demonstrating the role of career adaptability as an explanatory mechanism linking
adaptivity (e.g., dual coping tendencies) to career success outcomes (e.g., satisfaction and promotability).

In the attainment of these major aims, the results of this research made significant theoretical and practical contributions to answering the question, “How do individuals adapt to career development tasks and transitions?” It elucidated our understanding of the career construction model of adaptation and the central role of adaptability resources in career management. Indeed, “careers do not unfold, they are constructed as individuals make choices that express their self-concepts and substantiate their goals in the social reality of work roles” (Savickas, 2005; p.43).” It is hoped that the findings of this research program will inform career theory and practice to assist individuals better to influence their development confidently as they navigate through an increasingly complex career environment.
References


Appendix A

Delegated Authority’s Prior Approval to Submit PhD by Compilation

11/27/2014

RE: PhD by Compilation Query

Dear Laramie,

I give you a prior approval to submit a PhD by Compilation, provided you follow the instruction in the attached document.

Three papers can be sufficient, if they are at a quality level expected from (or have already published in) A/A* publications (ABDC list) and follow other requirements, such as authorship (see item #6). The thesis addition to the three papers should also include significant introduction and conclusion sections (see attached document).

Good luck.

Best Regards,

Ofer

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Canberra ACT 2000 Australia
T: +61 2 61256739

Guest Editor, Special Issue on Project Benefit Management, International Journal of Project Management
Human Ethics Protocol 2013/436

aries@anu.edu.au

Thu 10/10/2013 8:48 AM

Inbox

to: Lanieme Tolentino <lanieme.tolentino@anu.edu.au>

Cc: Human.Ethics.Officer@anu.edu.au <human.ethics.officer@anu.edu.au>; Prashant Bordia <prashant.bordia@anu.edu.au>

THIS IS A SYSTEM-GENERATED E-MAIL PLEASE DO NOT REPLY. SEE BELOW FOR E-MAIL CONTACT DETAILS.

Dear Ms Lanieme Tolentino,

Protocol: 2013/436
An Integrative Process Model of Career Aceptability

I am pleased to advise you that your Human Ethics application received approval by the Chair of the Humanities & Social Sciences DERC on 10 October 2013.

For your information:

1. Under the NHMRC/AVCC National Statement on Ethical Conduct in Human Research we are required to follow up research that we have approved. Once a year (or sooner for short projects) we shall request a brief report on any ethical issues which may have arisen during your research or whether it proceeded according to the plan outlined in the above protocol.

2. Please notify the committee of any changes to your protocol in the course of your research and when you complete or cease working on the project.

3. Please notify the Committee immediately if any unforeseen events occur that might affect continued ethical acceptability of the research work.

4. Please advise the HREC if you receive any complaints about the research work.

5. The validity of the current approval is five years maximum from the date shown approved. For longer projects you are required to seek renewed approval from the Committee.

All the best with your research,

Kim

Ms Kim Tiffen
Human Ethics Manager
Office of Research Integrity,
Research Services,
Ground Floor, Chancery IGB
Ellyay Crescent,
### Appendix C

**Publishing Company’s Copyright License Information and Manuscripts**

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Career adaptation: The relation of adaptability to goal orientation, proactive personality, and career optimism

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ABSTRACT

This study examines the psychometric properties of the Career Adapt-Abilities Scale (CAAS) and its relation to adaptivity (i.e., learning goal orientation, proactive personality, and career optimism) among Australian university students (N = 555). Results demonstrated adequate levels of test-retest reliability (r = .81 to .76) and internal consistency (α = .83 to .94) for the CAAS full scale and subscales over a 4-week interval between measurements. Confirmatory factor analysis also supported the multidimensional and hierarchical model of career adaptability resources. The factor structure generally corresponded with that obtained from other CAAS international validation, thus, expanding its cross-national measurement equivalence. In addition, correlation results supported the predicted positive association between career adaptability and adaptivity in the form of learning goal orientation, proactive personality, and career optimism. Taken together, the present findings confirm the psychometric utility of CAAS in the Australian context and substantiate the proposition that higher personal adaptive readiness relates to better career adaptability among young people.

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1. Introduction

In recent years, there has been a growing interest in understanding how individuals, through their self-regulative capacities, respond to the changing nature of careers. This has led to the collaborative development of the Career Adapt-Abilities Scale (CAAS), a 24-item instrument designed to measure the psychosocial construct of career adaptability in different countries. Each of the four subscales consists of six items measuring adaptability resources of concern, control, curiosity, and confidence (Savickas & Porfeli, 2012). As a set of psychosocial resources and transactional competencies, the formation of career adaptability is contingent upon the dynamic interplay between personal and environmental factors. Further empirical validation across different contexts is thus necessary given the varying levels of opportunities (e.g., access to education and employment) and constraints (e.g., shrinking employment prospects) influencing the development and use of career adaptability resources. While the CAAS international form demonstrated excellent reliability and cross-national measurement equivalence (Savickas & Porfeli, 2012), its validity for use in the Australian context requires further psychometric evidence.

In view of this, we aim to contribute to this line of work by examining the construct validity and test-retest reliability of CAAS along with the fit of its multidimensional and hierarchical model in the Australian context. This paper also aims to further elaborate the nomological network of career adaptability by investigating its relationship with adaptivity, the trait component in the model of career adaptation. Specifically, the model states that successful adaptation is expected for individuals who are willing (adaptivity) and able (adaptability) to express fitting behaviors that address changing conditions (Savickas & Porfeli, 2012).
2012). In the research reported here, adaptivity is conceptualized as self-regulative tendencies and operationalized as learning goal orientation, proactive personality, and career optimism. Overall, the current study examines the psychometric properties of CAAS and the relationship between career adaptability (resources) and adaptivity (readiness), with the expectation that individuals who are more willing to adapt their behaviors develop better career competencies (i.e., adapt-abilities: concern, control, curiosity, and confidence) to effectively manage changing work conditions.

To further explain the contextual relevancy of our research, we provide in the next section a brief description of the Australian work situation with particular focus on pertinent youth career-related issues. We also highlight the significance of career adaptability in their coping with the impact of adverse economic conditions in the labor market.

1.1. The Australian context

In comparison to other developed countries, Australia has demonstrated remarkable resilience from the extensive economic losses that ensued from the global financial crisis. Its robust labor market is characterized by employment growth in the last five years. Alongside this growth is a notable increase in the proportion of young Australians participating in formal education and vocational training (Department of Education, Employment, and Workplace Relations, 2013). Moreover, Australia fared well and generally above the recent Organisation for Economic Cooperation and Development’s (2013) country average on youth education and employment (e.g., tertiary education completion rate of 82% by comparison to OECD’s average rate of 70%) and employment indicators (e.g., employment rate of 60.7% by comparison to OECD’s average rate of 37.8%).

However, Australia’s steadfast labor market remains at risk as the unstable conditions of the global economy threaten to slow down its domestic productivity. The International Labour Organization (2015) projects a wide ranging and dispiriting upward trend in unemployment initiated by the global economy’s slow recovery. Over one year, Australia’s unemployment rate has slightly increased from 5.2% to 5.6%, with its labor under-utilization rate (i.e., workforce over-qualification and skills mismatch) increasing from 12.5% to 13.3% (Australian Bureau of Statistics, 2013a). Further, the ILO’s (2013) global trend report suggests that young people are most vulnerable to the prevailing job crisis. In the case of young Australians, the observed upward trend in educational participation and completion levels occur alongside an increased movement towards casual employment and high underemployment rates as transition and access to full-time employment remain highly competitive (Foundation for Young Australians, 2013). In effect, the current slow recovery of the global economy and unremitting labor market volatility dim the bright career prospects of young people. For instance, around 76.1% of bachelor degree graduates seeking fulltime jobs were in fulltime employment within four months of completing their degrees in 2012 (Graduate Career Australia, 2012), a decrease from 79.2% in 2009 and 85.2% in 2008. Thus, it is imperative to further understand how young people can be more equipped to navigate through an increasingly complex work environment characterized by rapid and pervasive change.

1.2. Career adaptability

In today’s fast-evolving career context marked by multiple transitions and increased personal responsibility, generic competencies transferable to various occupational situations, in addition to discipline-specific and technical skills, are increasingly becoming more valued in the workforce. For instance, self-management skills are highlighted in various national policy reports (e.g., The Australian Blueprint for Career Development and Employability Skills for the Future Framework) as one of the vital generic skills for the Australian workforce. Australian employers also noted these generic skills as enabling factors for organizational productivity as well as employee career development (Australian Chamber of Commerce and Industry & Business Council of Australia, 2002; Miles Morgan Australia, 2010). Correspondingly, research evidence suggests that career adaptable individuals are more capable of finding better job opportunities, successfully transitioning to work, and securing high quality employment (Klehe, Zick, van Vianen, Koen, & Buijten, 2012; Koen, Klehe, & van Vianen, 2012).

Career adaptability is one of the key enabling meta-competencies in a fast-paced and evolving work context (Hall & Mirvis, 1995; Savickas et al., 2009). It refers to a set of “attitudes, competencies, and behaviors that individuals use in fitting themselves to work that suits them” (Savickas, 2013; p.45). A multidimensional construct, it is comprised of four self-regulatory strengths (i.e., concern, control, curiosity, and confidence) that facilitate preparation for current and anticipated occupational changes. First, concern pertains to a time perspective towards preparation for one’s career future such as developing a career vision. Second, control indicates a sense of ownership and responsibility to exert influence on one’s career. Third, curiosity refers to the interest in exploring possible selves and career opportunities in one’s environment. Lastly, confidence pertains to the pursuit of career aspirations and an anticipation of success in face of obstacles. Overall, these four adapt-abilities enable adjustment to career-related changes, person-environment integration, and successful transitioning across the career lifespan (Savickas & Porfeli, 2012).

1.3. Adaptivity

The career construction model of adaptation posits adaptivity as the trait component that shapes the development and use of career adaptability resources. Adaptivity denotes readiness to change as well as willingness to negotiate career uncertainties with fitting responses (Savickas & Porfeli, 2012). In a study consisting of university students and full-time workers, Tolentino, Garcia, Restubog, Borda, and Tang (2013) conceptualized adaptive readiness in terms of a dual-process coping model (i.e., assimilative
and accommodative tendencies). They reported that both assimilative and accommodative tendencies were positively associated with career adaptability and adaptation outcomes (e.g., career satisfaction and career promotability).

We move this line of research forward by conceptualizing adaptivity as a compound trait in the form of self-regulative tendencies (i.e., learning goal orientation, proactive personality, and career optimism) and testing its relationship with career adaptability. Aligned with Savickas (2013), Career Construction Theory, the theoretical underpinnings of learning goal orientation, proactive personality, and career optimism are anchored in self-regulation capacities of individuals to respond and adjust successfully to life circumstances. Ancillary research also suggests that individuals who have the propensity to be proactive, flexible, and open to new experiences are more likely to manage their careers effectively than those who do not possess these traits (Eby, Borg, & Liebeskind, 2000; Tschannen-Moran, Ysselstein, & Hoyle, 2012). In the following section, we outline the theoretical considerations for using learning goal orientation, proactive personality, and career optimism as operational indicators of adaptive readiness. Next, we develop formal hypotheses linking each construct with career adaptability.

1.3.1 Learning goal orientation

Individuals differ in their willingness to adapt and respond to career circumstances (Savickas & Porfeli, 2012). To explicate this variation in adaptive readiness, we first draw from a mastery goal orientation perspective which puts forward individual differences in the construal of career situations and motivational patterns relevant to career adaptability. Specifically, we conceptualize adaptivity in terms of learning goal orientation, a relatively stable dispositional trait characterized by the pursuit of competence development and effective persistence in the face of obstacles (Dweck, 1986). Learning goal-oriented individuals perceive ability as malleable and proficiency as contingent on expended effort. As a result of this mastery orientation, they tend to engage in adaptive behaviors to enhance competencies such as setting higher goals, goal striving, and welcoming feedback in response to challenging life circumstances (Dweck & Legget, 1988). They also view challenging situations as an opportunity for development. Hence, learning goal-oriented individuals are more likely to perceive life circumstances (e.g., work transitions) as career enablers rather than barriers. This tendency toward maximizing personal growth may also propel individuals to further develop their ability to adapt to career-related challenges. In sum, the adaptive motivational patterns inherent in learning goal orientation facilitates the generation of self-regulative strategies essential to career adaptation as it promotes the “‘—establishment, maintenance, and attainment of personally challenging and personally valued achievement goals (Dweck, 1986, p. 1040).”

The particular focus on progress and effort among learning goal-oriented individuals fosters self-regulatory strategies underlying successful career adaptation. Past research has correspondingly found that an individual’s endorsement of learning goal orientation associated with desirable outcomes such as positive coping (Elliott & Dweck, 1988), help-seeking behaviors (Ryan & Piatrich, 1998), higher goal commitment (Klein & Lee, 2006), and self-esteem (Button, Mathieu, & Zajac, 1990). In the context of career development, higher learning goal orientation associated with increased self-directed learning, career aspirations, career decision-making confidence, and career satisfaction (Rhee-Kyno, Sungmun, & Jong, 2013; Creed, Tilbury, Boys, & Crawford, 2011; Garcia, Restubog, Toledano, Tolentino, & Rafferty, 2012; Godshalk & Sosik, 2003). Based on this research evidence, it is clear that learning goal orientation is a trait that fosters development of adaptability in the form of career competencies such as exploration, planning, and goal pursuit towards personal development. Thus, we expect that learning goal orientation associates positively with career adaptability (Hypothesis 1).

1.3.2 Proactive personality

In addition to willingness to adjust to change, adaptivity also involves readiness to take action in order to improve one’s career circumstances (Savickas, 2013). To this end, we further conceptualize adaptivity in terms of proactive personality which pertains to an individual’s predisposition to initiate action aimed at influencing one’s environment (Batem & Grant, 1993). Aligned with the emphasis on personal agency in Career Construction Theory, the proactive perspective posits that individuals can enact change to improve their current circumstances and are not always passive recipients of environmental constraints (Grant, 2000). When faced with the need for career adaptation, proactive individuals are likely to successfully prepare for and negotiate career-related changes given their propensity to identify opportunities for improvement and create work environments that are congruent with their vocational needs (Batem & Grant, 1993; Selbert, Grant, & Kraimer, 1998). Thus, we expect proactive individuals to be more responsive in actively shaping their work environment and developing their career adaptability resources.

Several lines of research suggest a positive association between proactive personality and career adaptability. First, the individual’s propensity to be proactive has been found to be associated with self-regulative strategies, such as goal setting (Fugate, Kinicki, & Ashforth, 2004); optimism (Rottinghaus, Day, & Borgen, 2005); as well as coping, information seeking, and self-direction (Selbert, Kraimer, & Grant, 2001). Past research has also demonstrated its positive relationship to a number of important job-related outcomes, such as job performance (Grant, 1995); tolerance for stress in demanding jobs (Park & Sprigg, 1999) and leadership effectiveness (Batem & Grant, 1993; Grant & Bateman, 2000; DeLuga, 1998). Similarly, career researchers pointed out the role of proactivity in relation to a boundaryless career mindset (Jackson, 1990; Mirvis & Hall, 1996) and protein career orientation (Creed, Macpherson, & Hood, 2010). Further empirical studies also support the positive association between proactivity and desirable career outcomes (e.g., socialization and organization entry in Ashford & Ilbac, 1985; Morrison, 1985; career planning in Frese, Fay, Hillburger, Leng, & Tag, 1997; and career success in Selbert et al., 1999, 2001). Consistent with these theoretical and empirical considerations, we expect that proactive personality associates positively with career adaptability (Hypothesis 2).
1.3.3. Career optimism

Finally, we conceptualize adaptivity in terms of career optimism, defined as a non-intellectual motivational factor reflecting expectations of the best possible outcome in relation to one's future career development (Rotthaus, et al., 2005). An optimistic individual is characterized by keenly interested in his/her career future, enthusiastically engages in learning that is directly related to that imagined future, and feels comfortable that he/she is on the appropriate path for career success (McHieven, Becs, & Burton, 2013, p. 230). This positive future orientation inherent in career optimism relates to adaptive readiness as it allows individuals to remain confident as they negotiate career obstacles and perform career planning tasks. Accordingly, optimists are likely to demonstrate willingness to respond to, and confidently overcome, career impediments.

The rationale for using career optimism to measure an aspect of adaptivity is drawn from the idea that positive expectancies compel individuals to instigate and sustain efforts to cope with adversities such as career instability (Schier, Carver, & Bridges, 1994). Optimists tend to manage change and uncertainty favorably because they are able to demonstrate flexibility when appraising and responding to new situations (Aspinwall, Richter, & Hoffman, 2001). As a result, optimists adjust better to life circumstances because they have more stable and adaptive coping tendencies (Carver, Schier, & Weintraub, 1989; Schier et al., 1994). A solid body of research has shown the benefits of optimism on health-related adjustment (e.g., better quality of life and subjective well-being in Scheier & Carver, 1992; less psychological distress in Carver et al., 2005; Fitzgerald, Tennen, Affleck, & Pransky, 1993; Trucono & Pinto, 2003) as well as on academic adjustment and satisfaction (Aspinwall & Taylor, 1992; McHieven et al., 2013). Furthermore, optimism has not only been found to predict adaptive career planning strategies (Creden, Paton, & Bartram, 2002), career optimistic individuals have been reported as striving higher academically, report greater comfort with their educational and career-related plans, as well as engage in activities that enhance their career insight (Rotthaus, et al., 2005). For these reasons, we expect that career optimism associates positively with career adaptability (Hypothesis 3).

2. Method

2.1. Participants and procedures

The overall sample consisted of 555 undergraduate university students enrolled in business and management courses at two universities in South Australia and the Australian Capital Territory. The latest Australian Social Trends indicate business and management (25%) as one of the most popular fields of study and report the Australian Capital Territory as the state with the largest proportion of higher education students (Australian Bureau of Statistics, 2013b). Four hundred forty seven students were used to test Hypotheses 1 to 3, while 108 additional students were used to examine the test–retest reliability of CAAS. A member of the research team explained the purpose of the study, administered, and collected completed questionnaires during class time at three data collection points during the semester. At Time 1, participants received a survey packet containing measures of adaptivity (e.g., learning goal orientation, proactive personality, and career optimism). At Time 2, four weeks after Time 1, the same participants (N = 447) and an additional 108 students were asked to answer the career adaptability scale. To examine the test–retest reliability of CAAS, a subsample of 108 students from the overall sample of 555 completed the career adaptability scale four weeks later (after Time 2 data collection). The overall sample comprised 37% female with a mean age of 22.10 years (SD = 2.19).

2.2. Measures

Unless otherwise specified, the response format for all items, excluding demographic variables, was a 7-point Likert-type scale (1 = strongly disagree; 7 = strongly agree). This response format was employed as opposed to the 5-point Likert scale used in previous CAAS studies to provide participants with a wider range of response anchors to choose from and to also minimize neutral responses in the scale (Moes & Jacoby, 1972). Previous research suggests that limited response options may result in loss of power and difficulty in detecting significant effects (Aguinis, Bomer, & Pierce, 1996).

2.2.1. Career Adapt-Abilities Scale (Savickas & Porfei, 2012)

The CAAS International form contains 24 items that combine to yield a total score indicating career adaptability (for items, see Savickas & Porfei, 2012). The 24 items are divided equally into four subscales that measure the adaptability resources of concern, control, curiosity, and confidence. The item descriptive statistics and loadings from the confirmatory factor model appear in Table 1. The overall scale for the CAAS International has a reported reliability of .92, which is higher than the subscale reliability estimates for concern (α = .83), control (α = .74), curiosity (α = .79), and confidence (α = .85) (Savickas & Porfei, 2012). The reliabilities of the subscales for this sample are displayed in Table 1. The overall scale from the CAAS-Australia had a reliability of .94, which is higher than the subscale alphas for concern (α = .85), control (α = .84), curiosity (α = .84), and confidence (α = .89). Overall, the reliabilities are generally higher for this sample relative to the total international sample.

2.2.2. Learning goal orientation (Button et al., 1996)

Learning goal orientation was measured at Time 1 using an 8-item scale. Participants indicated how strongly they agreed with statements such as: “The opportunity to extend the range of my abilities is important to me” and “I prefer to work on tasks that force me to learn new things.” The internal consistency for this scale in this sample was .90.
Table 1
Career adapt-abilities scale: items, descriptive statistics, standardized loadings, and internal consistency reliabilities.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Item (first-order indicators)</th>
<th>Mean</th>
<th>SD</th>
<th>Loading</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concern</td>
<td>1. Thinking about what my future will be like</td>
<td>5.45</td>
<td>1.08</td>
<td>.62</td>
<td>.85</td>
</tr>
<tr>
<td></td>
<td>2. Realizing that today’s choices shape my future</td>
<td>5.46</td>
<td>1.12</td>
<td>.66</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Preparing for the future</td>
<td>5.30</td>
<td>1.11</td>
<td>.83</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Becoming aware of the educational and career choices that I must make</td>
<td>5.48</td>
<td>1.06</td>
<td>.75</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Planning how to achieve my goals</td>
<td>5.29</td>
<td>1.14</td>
<td>.77</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Concerned about my career</td>
<td>5.59</td>
<td>1.24</td>
<td>.57</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>1. Keeping upbeat</td>
<td>5.20</td>
<td>1.10</td>
<td>.63</td>
<td>.84</td>
</tr>
<tr>
<td></td>
<td>2. Making decisions by myself</td>
<td>5.48</td>
<td>1.14</td>
<td>.64</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Taking responsibility for my actions</td>
<td>5.84</td>
<td>1.05</td>
<td>.65</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Sticking up for my beliefs</td>
<td>5.62</td>
<td>1.30</td>
<td>.78</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Counting on myself</td>
<td>5.56</td>
<td>1.03</td>
<td>.77</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Doing what’s right for me</td>
<td>5.57</td>
<td>1.06</td>
<td>.73</td>
<td></td>
</tr>
<tr>
<td>Curiosity</td>
<td>1. Exploring my surroundings</td>
<td>5.24</td>
<td>1.13</td>
<td>.66</td>
<td>.84</td>
</tr>
<tr>
<td></td>
<td>2. Looking for opportunities to grow as a person</td>
<td>5.00</td>
<td>1.08</td>
<td>.71</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Investigating options before making a choice</td>
<td>5.47</td>
<td>1.09</td>
<td>.68</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Observing different ways of doing things</td>
<td>5.34</td>
<td>1.07</td>
<td>.72</td>
<td></td>
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<tr>
<td></td>
<td>5. Pretending deeply into questions I have</td>
<td>5.02</td>
<td>1.18</td>
<td>.63</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Becoming curious about new opportunities</td>
<td>5.54</td>
<td>1.07</td>
<td>.83</td>
<td></td>
</tr>
<tr>
<td>Confidence</td>
<td>1. Performing tasks efficiently</td>
<td>5.36</td>
<td>1.11</td>
<td>.62</td>
<td>.83</td>
</tr>
<tr>
<td></td>
<td>2. Taking care to do things well</td>
<td>5.47</td>
<td>1.05</td>
<td>.73</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Learning new skills</td>
<td>5.33</td>
<td>1.04</td>
<td>.76</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Working up to my ability</td>
<td>5.46</td>
<td>1.09</td>
<td>.80</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Overcoming obstacles</td>
<td>5.35</td>
<td>1.00</td>
<td>.76</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Solving problems</td>
<td>5.48</td>
<td>1.03</td>
<td>.73</td>
<td></td>
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<table>
<thead>
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<th>Mean</th>
<th>SD</th>
<th>Loading</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adaptability</td>
<td>1. Concern</td>
<td>5.43</td>
<td>.85</td>
<td>.73</td>
<td>.94</td>
</tr>
<tr>
<td></td>
<td>2. Control</td>
<td>5.54</td>
<td>.80</td>
<td>.88</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Curiosity</td>
<td>5.37</td>
<td>.82</td>
<td>.88</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Confidence</td>
<td>5.44</td>
<td>.85</td>
<td>.88</td>
<td></td>
</tr>
</tbody>
</table>

Note: N = 555; all factor loadings are statistically significant at p < .001.

2.2.3. Proactive personality (Bateman & Crant, 1993)

Due to time constraints imposed by the participating universities, we used a shorter 10-item version of the original measure of proactive personality. The 10 items with the highest factor loadings were retained out of the original 17-item scale. Participants were asked to rate the extent to which they agreed with statements such as: "I am constantly on the lookout for ways to improve myself" and "I always look for better ways to do things." Internal consistency for this scale in this sample was .90.

2.2.4. Career optimism (Rothbardnus et al., 2005)

Career optimism was measured using a 10-item scale. The scales were slightly modified to reflect optimism regarding the students’ future business ventures. One item (e.g., it is difficult for me to set career goals) was dropped because it was too general to be modified in relation to future business ventures. A sample item is, “Thinking about my future business venture inspires me” and “I am eager to pursue my business dreams.” Internal consistency for this scale was .80.

3. Results

3.1. Descriptive statistics and correlations of the CAAS-Australia form

The CAAS-Australia item means and standard deviations suggest that the typical response was in the range of strong to very strong. Skewness and kurtosis values for the 24 items CAAS-Australia ranged from (−91 to −21) and (−28 to 1.16) respectively suggesting that the items conform to the assumptions of confirmatory factor analysis for this sample. Scale means, standard deviations, and zero-order correlations for all study variables appear in Table 4. Skewness and kurtosis values for the four CAAS-Australia subscales ranged from (−37 to −98) and (−35 to 40) respectively. These values suggest that the subscales conform to the assumptions of correlation-based statistics for this sample. Correlations among the adaptability subscales and the adaptability total score ranged from .54 to .87 and were all statistically significant (p < .001) (see Table 2).

3.2. Confirmatory factor analysis

Confirmatory factor analysis (CFA) showed that data for CAAS-Australia fit the theoretical model very well. The fit indices of RMSEA = .049 and SRMR = .041 conform to established joint fit criteria (Hu & Bentler, 1999) and compare favorably to the fit indices for the CAAS-International model (RMSEA = .053 and SRMR = .039). The standardized loadings (see Table 1) suggest
Table 2
Zero-order correlations of CAAS-Australia subscales and total score.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Concern</td>
<td>5.43</td>
<td>.85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Control</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4. Confidence</td>
<td>5.44</td>
<td>.85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Career adaptability</td>
<td>5.44</td>
<td>.79</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: N = 555; all correlations are statistically significant at p < .001.

that all items are strong indicators of the second-order constructs, which are in turn strong indicators of the third order adaptability construct.

3.3. Comparison of the CAAS-Australia factor model to international factor model

Comparing the CAAS-Australia hierarchical factor model to the model for the CAAS-International indicated that the loadings of first-order items on the second-order factors of adaptability were generally higher. Only few items emerged as slightly lower (#1 and #6) or equal to (confidence #6) the loadings found in the CAAS-International sample. Of the second-order constructs, concern (CAAS-Australia = .73; CAAS-International = .78) and confidence (CAAS-Australia = .85; CAAS-International = .90) exhibited the greatest difference in loading between the Australian and international samples, with the international sample exhibiting a stronger loading. While the loading for control was slightly higher in the Australian sample (CAAS-Australia = .88; CAAS-International = .86), a similar loading of .88 was obtained for curiosity for both CAAS-Australia and CAAS-International.

3.4. Test-retest reliability

To examine the temporal stability of the CAAS-Australia, we calculated test-retest reliabilities using Pearson product moment correlations based on a 4-week interval. A total of 108 students from the overall sample of 555 were included in this analysis. Table 3 presents estimates of internal consistency and test-retest reliabilities for the CAAS-Australia total score and subscales. All subscales and the total score yielded good internal consistency reliabilities (α = .83–.94) well above the recommended standard of .70 (DeVellis, 2012). Similarly, test-retest reliabilities were high for all four subscales of concern (r = .73, p < .001), control (r = .61, p < .001), curiosity (r = .66, p < .001), and confidence (r = .70, p < .001), well above the standard of .50 for high correlations (Cohen & Cohen, 1983). Test-retest reliability for the CAAS-Australia total score was also high and statistically significant (r = .70, p < .001).

3.5. Hypotheses tests

The hypotheses were tested by examining correlations between adaptivity (i.e., learning goal orientation, proactive personality, and career optimism) and career adaptability. As can be seen in Table 4, all correlations were significant and in the expected direction. It was proposed that learning goal orientation would associate positively with adaptability (Hypothesis 1). Significant positive correlations were found between Time 1 learning goal orientation and the CAAS subscales of concern (r = .26, p < .001), control (r = .31, p < .001), curiosity (r = .24, p < .001), and confidence (r = .24, p < .001) measured at Time 2. More importantly, the correlation between Time 1 learning goal orientation and Time 2 adaptability was .37 (p < .001). Overall, Hypothesis 1 was supported.

It was further proposed that proactive personality would associate positively with adaptability (Hypothesis 2). Significant positive correlations were found between Time 1 proactive personality and the CAAS subscales of concern (r = .36, p < .001), control (r = .37, p < .001), curiosity (r = .36, p < .001), and confidence (r = .44, p < .001) measured at Time 2. Furthermore, the correlation between Time 1 proactive personality and Time 2 adaptability was .45 (p < .001). Overall, Hypothesis 2 was supported.

Table 3
Internal consistency and test-retest reliabilities of the overall career adaptability scale and subscales.

<table>
<thead>
<tr>
<th>Subscale/measure</th>
<th>Cronbach’s alpha coefficient (Time 1)</th>
<th>Cronbach’s alpha coefficient (Time 2)</th>
<th>Test-retest reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concern</td>
<td>.83</td>
<td>.82</td>
<td>.73</td>
</tr>
<tr>
<td>Control</td>
<td>.84</td>
<td>.84</td>
<td>.61</td>
</tr>
<tr>
<td>Curiosity</td>
<td>.84</td>
<td>.85</td>
<td>.66</td>
</tr>
<tr>
<td>Confidence</td>
<td>.88</td>
<td>.89</td>
<td>.70</td>
</tr>
<tr>
<td>Career Adaptability</td>
<td>.89</td>
<td>.84</td>
<td>.76</td>
</tr>
</tbody>
</table>

Note: N = 108; all correlations are statistically significant at p < .001. T1 and T2 measurement periods are 4 weeks apart.
Table 4
Means, standard deviations, and zero-order correlations for CAAS-Australia and study variables.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Time 1 learning goal orientation</td>
<td>5.50</td>
<td>.89</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Time 1 proactive personality</td>
<td>5.11</td>
<td>.86</td>
<td>.42</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Time 1 career optimism</td>
<td>4.37</td>
<td>.86</td>
<td>.28</td>
<td>.46</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Time 2 concern</td>
<td>5.31</td>
<td>.83</td>
<td>.26</td>
<td>.36</td>
<td>.38</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Time 2 control</td>
<td>5.52</td>
<td>.79</td>
<td>.31</td>
<td>.37</td>
<td>.31</td>
<td>.56</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Time 2 curiosity</td>
<td>5.34</td>
<td>.81</td>
<td>.34</td>
<td>.28</td>
<td>.23</td>
<td>.55</td>
<td>.66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Time 2 confidence</td>
<td>5.42</td>
<td>.84</td>
<td>.34</td>
<td>.44</td>
<td>.28</td>
<td>.57</td>
<td>.85</td>
<td>.65</td>
<td></td>
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<tr>
<td>8. Time 2 career adaptability</td>
<td>5.41</td>
<td>.69</td>
<td>.37</td>
<td>.45</td>
<td>.33</td>
<td>.80</td>
<td>.86</td>
<td>.85</td>
<td>.87</td>
</tr>
</tbody>
</table>

Note: *N* = 447; all correlations are statistically significant at *p* < .001.

We also hypothesized that career optimism would associate positively with adaptability (Hypothesis 3). Significant positive correlations were found between Time 1 career optimism and the CAAS subscales of concern (*r* = .30, *p* < .001), control, (*r* = .31, *p* < .001), curiosity (*r* = .23, *p* < .001), and confidence (*r* = .28, *p* < .001) measured at Time 2. Similarly, the correlation between Time 1 career optimism and Time 2 adaptability was .33 (*p* < .001). Thus, Hypothesis 3 was supported.

4. Discussion

For the purpose of contributing to the understanding of career adaptability, we validated the CAAS in the Australian context and tested its relationship with adaptivity in terms of learning goal orientation, proactive personality, and career optimism. Findings support both of these features and are discussed in the succeeding sections.

4.1. Psychometric properties of the Career Adapt-Abilities Scale – Australia

In line with our expectations, CAAS demonstrated sound psychometric properties and a coherent multidimensional and hierarchical structure that fits the theoretical model and linguistic explication of career adaptability resources. In the case of the means reported herein, the values are higher as compared to other CAAS validation studies because a 7-point Likert scale was adopted in the current study to reduce neutral responses and prevent loss of power (Aguinis et al., 1996; Matell & Jacoby, 1972). The overall responses, nevertheless, range from strong to very strong and are comparable to CAAS-International results. Furthermore, the current findings provide evidence of an excellent test-retest reliability of the sample’s career adaptability by means of CAAS, which was found to be a stable measure over a 4-week interval between measurements. Specifically, the full scale and four subscales each demonstrate adequate to excellent internal consistency estimates (α = .83–.94) and test-retest reliabilities (*r* = .61–.76, *p* < .001) over time. Overall, the obtained reliabilities of CAAS-Australia are generally higher compared to the total international sample.

With respect to factor loadings, the curiosity subscale (.88) is similar to the CAAS-International loading (.88) while the control subscale (.88) is slightly higher than the international sample’s loading (.86). Conversely, the concern subscale’s loading (.73) is slightly lower compared to the international sample’s loading (.78), similar to the confidence subscale (.85), which also emerged as lower compared to the CAAS-International loading (.86). These slight loading differences may reflect some cultural boundary conditions or sample characteristics that influence the expression of career adaptability in certain contexts. Indeed, Savickas and Porfell (2012, p. 3) noted that, “countries vary in the degree to which they prompt the formation of adaptability because they provide different opportunities and imperatives to develop and express psychosocial resources and transactional competencies.” For instance, the observed higher loading in the control subscale may be explained by Australia’s predominantly self-driven rather than institutionally constructed career pathways. According to an OECD (2002) report, Australia’s “labor market is relatively open and less dependent on occupationally-linked qualifications that young people are often able to try out a variety of jobs as part of their career maturation” (p. 3). Consequently, these factors may have reinforced young Australians’ sense of responsibility to mobilize one’s career (i.e., control) and their interest to actively explore career opportunities (i.e., curiosity) in their environment.

However, the scarring effects of the prevailing youth job crisis and adverse labor market conditions continue to drive the young Australians’ career concern and confidence. This discouragement from seeking work is evident in the growing number of young Australians delaying entry to or leaving the workforce as indicated by the increasing rate of youth participation in full-time education and those not fully engaged in employment, education, or training (Foundation for Young Australians, 2013). Then again, the upward trend of participation in further education and vocational training among young Australians may also indicate adaptive readiness and ability to respond to the job crisis since gaining technical knowledge and skills increases their chances for securing a more stable and higher quality job. Simply put, these adapting behaviors may have been fostered by their higher sense of career control and curiosity as demonstrated in the current findings.
Alternatively, these differences may have been due to the sample's unique characteristics. For instance, the current sample consists of university students in their early career stage and is still in the process of discovering their career identity, developing competencies and gaining relevant experience. Another plausible reason particularly for the observed lower career concern may be due to young people's tendency to believe in an ideal career characterized by maladaptive and unrealistic career expectations (Prideaux & Creed, 2002). These proposed explanations, however, warrant further empirical testing. In general, the CAAS-Australia form has exemplified excellent psychometric properties and factor structure comparable to the CAAS-international validation.

4.2. Hypothesis tests

To test the model of career adaptation, we examined the proposed relationships between career adaptability (resources) and adaptivity (readiness). The observed pattern of significant relationships is consistent with our predictions and largely confirms the convergent validity of the CAAS. As predicted, adaptivity (i.e., learning goal orientation, proactive personality, and career optimism) related positively to overall career adaptability and its four dimensions (i.e., concern, control, curiosity, and confidence). Firstly, the pattern of relationships implies that adaptive individuals espousing a learning goal orientation tend to develop career adaptability resources given their predisposition to focus on competence development and sustain effort in the face of obstacles. In line with previous work (e.g., Creed et al., 2011; Garcia et al., 2012; Godshalk & Sosik, 2003), this finding further supports the enabling role of learning goal orientation in the development of key career competencies such as adaptability.

In the same way, the present findings support the prediction that proactive personality relates positively to career adaptability. Proactive individuals are better able to adapt successfully because of their propensity to select, create, and influence their work environment. If therefore strengthens the theoretical assumption that adaptivity along with willingness to adjust to changing conditions also entails a proactive stance, as exemplified by readiness to take action to improve one's career circumstances and prepare for imminent work-related changes (Savickas, 2013). Lastly, career optimism likewise correlated positively with career adaptability. Optimistic individuals are more adaptable given their confident future orientation and focus on strengths amidst adversity. In addition, optimists' positive expectations enable them to demonstrate flexibility, a necessary attribute for adaptation when appraising and responding to new and uncertain situations (Aspinwall et al., 2001).

4.3. Implications for theory and practice

Results generally support the multidimensional and hierarchical nature of career adaptability thereby contributing to the growing evidence of construct validity and cross-national measurement equivalence of CAAS. It also provides preliminary support for the theoretical assumption that adaptability (resources) is essentially fostered by adaptivity (willingness), which denotes readiness to respond to changing vocational tasks and conditions (Savickas & Porfeli, 2012). In this study, we have shown that adaptive readiness, as a component trait, may also be exemplified as learning goal orientation, proactive personality, and career optimism. Aligned with Savickas' (2013) career construction model of adaptation, the findings suggest that individuals who demonstrate adaptive readiness are, thus, more likely to develop career competencies in the form of adaptabilities (i.e., concern, control, curiosity, and confidence).

Furthermore, the validation of CAAS in Australia builds confidence for its usefulness as tool for researchers and practitioners who would like to quantitatively measure adaptability resources among university students. The assessment of individual adaptability competencies is a critical component of career counseling as it enables practitioners to analyze career-related needs and design interventions aimed at promoting successful adjustment to changing work conditions. Career adaptability is also increasingly becoming a vital component of career development as it facilitates the successful adjustment and proactive search for better job opportunities, which are imperative in today's dynamic career context (Kiefe et al., 2012). As suggested by Savickas (2013), career adaptability resources can be further strengthened through the provision of career interventions such as time perspective workshops that foster future orientation and planfulness (concern), information-seeking activities (curiosity), self-esteem building (confidence), and decision-making training (control).

4.4. Limitations and future directions

While we have employed a temporal research design in which there was a 4-week time lag, we still cannot assume causal relationships between the adaptivity indicators (i.e., learning goal orientation, proactive personality, and career optimism) and career adaptability. Given the limited generalizability of the current findings, it would be valuable for future research to further validate CAAS and test the career adaptation model by replicating studies in diverse samples across time, geographical regions, fields of study or profession, and career stages. For instance, career adaptability in the late career context is a relevant area of future research given the rapid shift in today's workforce demographics (e.g., growth of aging workers; UN Department of Economics and Social Affairs, 2002). Specifically, career adaptability is an important competency for adult workers to successfully manage the competing work and life demands that occur with inevitable developmental decrements and environmental changes. Additional research is also needed to elaborate the existing nomological network of career adaptability and testing the overall career adaptation model by examining related personal (e.g., coping strategies), situational (e.g., workplace support), and cultural (e.g., traditionality) variables. Despite such important avenues for further research, the initial validity and correlational evidence

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are sufficiently encouraging to suggest the psychometric utility of GAAS and its significant positive relations to adaptivity in the Australian context.

5. Conclusion

In conclusion, the current validation effort supports the growing literature on the utility of the Career Adaptability Scale across varied cultural contexts. The measure in its current form demonstrates strong potential for its application in career development research and intervention in Australia. Furthermore, the correlational findings between adaptive readiness and adaptability resources, identified as important precursors of successful career adaptation, contribute to the increasing empirical evidence supporting the usefulness of the career construction model of adaptation. Indeed, the promotion of career adaptability through research and practice expands our understanding of individuals’ self-regulatory capacity to thrive amidst the complexities and uncertainties of the current career context.

References


The role of career adaptability in predicting entrepreneurial intentions: A moderated mediation model

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ABSTRACT

Guided by the Career Construction Theory (Savickas, 2013), we view entrepreneurship as an adaptive vocational behavior driven by an individual’s self-regulatory capacity to thrive in a complex entrepreneurial career context. Our research model posited that individuals rely on their adaptive resources and entrepreneurial self-efficacy as they form entrepreneurial intentions. Career adaptability, as self-regulatory competencies, is further strengthened by prior exposure to family business. We collected data over three measurement periods from Serbian business students (n = 381) and validated the Career Adapt-Abilities Scale (CAAS). The moderated mediation model was supported and as predicted: (a) career adaptability was positively associated with entrepreneurial intentions and (b) the mediated relationship between career adaptability and entrepreneurial intentions via entrepreneurial self-efficacy was stronger for individuals with prior exposure to family business. In addition, we provide evidence for the psychometric properties of CAAS by examining its internal consistency, test–retest reliability, and factor structure. Taken together, our study offers the groundwork for understanding successful adaptation in the entrepreneurial career context and supports the cross-national measurement equivalence and utility of CAAS in a developing economy.

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1. Introduction

An entrepreneurial career encompasses a self-directed process of navigating through novel situations, ambiguous career trajectories, and volatile business contexts. Indeed, entrepreneurial activities hinge on personal agency as its development and actualization depend on the individual's capability to recognize and pursue opportunities (Shane, Locke, & Collins, 2003). It is therefore important to understand which personal factors facilitate or impede an individual's intentions to become an entrepreneur. The role of personal factors in the development of an entrepreneurial career has been widely investigated (Rauch & Frese, 2007; Unger, Rauch, Frese, & Rosenbusch, 2011; Zacher, Beemann, Gielin, & Frese, 2012). Despite the growing interest in individual differences associated with entrepreneurial proclivity and engagement, there are still gaps in the literature that need to be addressed. First, several prior studies that profiled entrepreneurs primarily relied on a trait-perspective and examined global dispositions (Rickel, Gundry, Barbosa, & Whitman, 2009; Leitner,
Ahmetoglu, Akhtar, & Channon-Premuzic, 2014; Zhao, Seibert, & Lumpkin, 2010). Clearly, entrepreneurship is more than just an occupation to which individuals are predisposed; it is also a goal-directed behavior influenced by complex psychological and cognitive processes. Indeed, Shook, Pienu, and McGee (2003) suggested that future studies examine the integration between psychological and cognitive characteristics of the entreprenurial individual because these factors could intervene in the process of business creation. Second, the literature on entrepreneurial intentions concentrates on testing for its direct determinants and ignores the underlying mechanisms and boundary conditions through which personal variables influence intentions. Research on how and why personal and situational factors lead to entrepreneurial intentions could provide insight to theory development and practical intervention for up-and-coming entrepreneurs. To date, calls have been made for the use of alternative theories to account for the dynamic entrepreneurial process and to identify other antecedents that might explain the variance beyond that accounted for by predominant theories (Schlegel & Koenig, 2014; Shane et al., 2003). While Career Construction Theory (Savickas, 2013) has been employed predominantly to investigate adaptation in organizational careers, research examining career adaptability in the context of entrepreneurial careers is currently missing despite the vital role of adaptive competence in business creation. Finally, most of the existing studies on early entrepreneurial career development were derived from cross-sectional data using static designs and typically examined venture creation in the context of developed economies.

In view of these research gaps, we examined the role of career adaptability and the underlying mechanisms through which it facilitates proxility towards starting a business venture. Drawing upon Career Construction Theory, we view entrepreneurial career development as geared towards person–environment integration and driven by adaptation to a series of transitions and periods in the entrepreneurial process of discovering, evaluating, and exploiting opportunities. Along these lines, we argue that career adaptability acts as a self-regulatory resource that increases the likelihood to start a business. We further posit that entrepreneurial intentions are mediated by entrepreneurial self-efficacy. Moreover, prior exposure to family business will serve as a proximal contextual resource that strengthens the formation of entrepreneurial intentions among adaptable and efficacious individuals.

This study makes several contributions to the entrepreneurial career literature. First, we address the call to consider alternative theoretical perspectives and determinants of entrepreneurial intentions. Further insights into the individual-level antecedents of entrepreneurial intention could help us determine instrumental factors in transforming potential entrepreneurs into business founders. (Krueger & Branow, 1994). Developing intentions is mainly motivational, thus it is grounded on the agent's self-capacity for volition and direction (Bandura, 1989; Gollwitzer, 1999). By using the Career Construction Theory and examining agentic resources such as career adaptability and self-efficacy, we develop an enhanced understanding of how individuals are able to form entrepreneurial intentions and manage their career development amidst the impending risk and uncertainty of business venturing. The integration of career construction perspective also supports the broader use of robust theory-driven process models in entrepreneurship research (MacMillan & Katz, 1992). Unlike previously examined stable psychological traits, adaptive competence and self-efficacy pertain to a dynamic aspect of development. Because career adaptability and entrepreneurial self-efficacy are malleable psychosocial resources, it provides an opportunity for intervention and enhancement throughout the lifespan (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001; Savickas, 2013).

Second, our research model provides preliminary evidence for the applicability of Career Construction Theory in entrepreneurial careers and the integration of socio-cognitive and entrepreneurship variables contribute to the expansion of career adaptability’s current theoretical net. To our knowledge, this study was the first to examine the relationship between career adaptability and entrepreneurship over time among young people in a developing economy. Furthermore, we accounted for the socio-cognitive mechanism (i.e., entrepreneurial self-efficacy) and enabling contextual condition (i.e., family business) underlying the relation between career adaptability and entrepreneurial intentions. The examination of mechanisms and boundary conditions through which entrepreneurial intent develops sheds light to a more comprehensive representation of entrepreneurial career planning and the dynamic process of business creation. Further, we take into account the moderating role of family business, enriching the existing knowledge on the extent to which family background might influence an individual’s entrepreneurial intentions (Altinay, Mudanoglu, Dandie, & Lashley, 2012; Zellweger, Sieger, & Halter, 2011).

Finally, the present study addresses the methodological limitations of prior research by implementing a temporal design to account for the change process and time elements necessary to test antecedents of intention formation in a developing country (i.e., Serbia) with unique business contingencies. In the sections that follow, we elaborate on the theoretical linkages between the study variables and conclude with specific hypotheses.

1.1. Career adaptability and entrepreneurial intention

Career adaptability constitutes self-regulatory strengths that individuals rely on to manage vocational developmental tasks and to direct their career development. It is comprised of four adaptive behaviors that are used proactively (e.g., eminent developmental task or transition) or reactively (e.g., in response to unexpected challenges) to prepare for or cope with current and anticipated career-related changes and tasks associated with one’s occupational role (Savickas & Porfeli, 2012). Career concern pertains to a time perspective towards preparation for the future such as developing a career vision. Career control reflects a sense of ownership and responsibility to exert influence on one’s career. Career curiosity refers to interest in exploring possible selves and opportunities in one’s environment. Lastly, career confidence pertains to the persistent pursuit of aspirations and anticipation of success in the face of obstacles. These transactional and psychosocial resources are a set of career competencies individuals use to navigate successfully through unfamiliar and complex environments.

The ability to engage in self-regulation during a business development process is vital for entrepreneurial entrance (Patel & Thatcher, 2012). Unlike traditional career pathways, the entrepreneur’s business is closely intertwined involving a higher degree of
personal commitment, self-direction, and tolerance of uncertainty. Therefore, business ventures require substantial human capital resources such as career adaptability. Career Construction Theory suggests that adaptability resources facilitate the regulation of career goals and behaviors (Savickas, 2013). It is a human capital of accumulated career competencies derived from the individual's education and relevant experiences. Along these lines, we expect that a meaningful relationship exists between career adaptability and well-formed entrepreneurial intentions. This prediction is based on the notion that highly adaptable individuals possess psychological resources that make them more adept in recognizing business opportunities, mobilizing resources, leveraging uncertainty, and fitting into new circumstances as they pursue career goals. Correspondingly, prior research has profiled successful entrepreneurs as confident, persistent, and resilient despite the accompanying threats and set-backs of business ventures (Bulough, Renko, & Myatt, 2014; Hayward, Forster, Sarasvathy, & Fredrickson, 2010; Zhao, Seibert, & Hills, 2005). Thus, we predict that:

**Hypothesis 1.** Career adaptability relates positively to entrepreneurial intentions.

1.2. A moderated mediation model of entrepreneurial intentions: the role of entrepreneurial self-efficacy and family business

Under comparable conditions, not all individuals with similar competencies are able to successfully enact an entrepreneurial role (Markman & Baron, 2003). Future entrepreneurs must formulate actual intentions with a high degree of confidence and persistence to surmount obstacles (Krueger & Reans, 1994). Adaptive behaviors are most likely to be enacted and sustained in the entrepreneurial process when individuals possess self-efficacy beliefs to initiate business ventures. Effective individuals are able to set higher goals, develop better plans, sustain their effort, use feedback constructively, and persist through setbacks (Bandura, 1989). These characteristics are vital because business ventures present ambiguous, risky, and uncertain situations where effort, persistence, and planning are important (Shane et al., 2003). The positive relations between career adaptability and self-efficacy have been examined in the context of early career development (Hirschi, 2009) and job search success (Guan et al., 2013). Similarly, robust evidence supports the importance of self-efficacy as a socio-cognitive mechanism in entrepreneurial intent formation (Chen, Greene, & Crick, 1998; Zhao et al., 2005) and venture growth (Baum & Locke, 2004). In the current study, we argue that career adaptability can foster entrepreneurial intentions by engendering an individual's entrepreneurial self-efficacy beliefs. This argument is consistent with Liñan and Chen (2009), who suggested that human capital and other demographic behaviors could indirectly drive intentions through personal perceptions about entrepreneurial activity. According to Bird (1988), personal abilities and resources can indirectly influence entrepreneurial intentions through "initiative, holistic, and contextual thinking" and "rational, analytic, and cause-and-effect-oriented processes" (p.443). Hence, an individual with strong career adaptability will have more confidence in formulating a business plan, analyzing a business opportunity, and setting goals, which in turn results in a vision and a feeling of the potential value of being an entrepreneur.

Further, Savickas and Porfeli (2012) conceptualized career adaptability as a psychosocial resource shaped by contextual contingencies. Drawing upon the propositions of Career Construction Theory about early socialization, we contend that prior exposure to family enterprise strengthens entrepreneurial intent as it facilitates the internalization of roles and behaviors pivotal to proclivity towards business ownership and entrepreneurial career readiness. Elements of socialization (e.g., raising capital, establishing trust and legitimacy, building networks) are embedded in the tasks an entrepreneur must accomplish in order to be successful (Steier, 2001). Hence, prior exposure to family business may help facilitate a successful venture as early socialization in enterprising activities develops familiarity and provides access to essential business resources (Zellweger et al., 2011). Indeed, prior studies found that early exposure to enterprising activities in a family business context predicted entrepreneurial intent and commitment (Carr & Seguin, 2007; Dawson, Sharma, Irving, Marcus, & Chirico, 2013). Through vicarious learning experience, individuals are exposed to business-related knowledge, necessary skills for day-to-day business operations, as well as unbiased inside information that facilitates optimism about their capabilities and resources to manage business ventures of their own (Abitay et al., 2012; Zellweger et al., 2011). The preceding arguments produce an integrative framework in which entrepreneurial self-efficacy moderates the relationship between career adaptability and entrepreneurial intentions, and this mediated effect is stronger for those participants with prior exposure to family business. Stated formally, we predict that:

**Hypothesis 2.** The conditional indirect effect of career adaptability on entrepreneurial intention via entrepreneurial self-efficacy is moderated by family business, such that the mediated relationship is stronger for those who have a prior exposure to family business as opposed to those who do not have a family business.

2. Method

2.1. Research context

Given the economic and social relevance of entrepreneurs, it is important to understand what drives young people's intent to start a business, especially those from developing countries. In Serbia, the national economy is struggling with low GDP per capita (below US$1,1000), very high unemployment (approximately 23%), and a 50% increase in poverty (Economy Watch, 2013). The deteriorating living conditions have prompted young Serbians to explore alternative career options and 85.5% of the Serbian youth expressed their interest in opening their own business (Stamatović, Žakić, Marković, & Stamatović, 2012; Uvalic, 2010).
2.2. Participants and procedures

At Time 1, surveys were administered to 560 university students pursuing a bachelor's degree in Entrepreneurship, Management, and Commerce in Serbia. The questionnaire contained demographic questions (e.g., gender and family business) and the scale that assessed career adaptability. A total of 380 completed questionnaires were returned yielding a response rate of 67.83%. This sample was used to provide validity evidence for the CAAS-Serbia. At Time 2, two months after the Time 1 data collection, we asked the same 380 participants to answer a questionnaire assessing their entrepreneurial self-efficacy. A total of 200 surveys were retrieved yielding a response rate of 52.83%. At Time 3, two months after the Time 2 data collection, we again surveyed the remaining 200 participants and asked them to answer a questionnaire assessing entrepreneurial intentions. We also asked the participants to report their career adaptability to provide evidence for the test–retest reliability of the CAAS scale. A total of 180 completed questionnaires were retrieved resulting in a response rate of 90%. This final sample of 180 matched responses over the three measurement periods comprised of 56% males with a mean age of 24.38 years (SD = 2.82).

2.3. Measures

Survey items were presented in English because this language is spoken by a vast majority of Serbian youth and is predominantly used in educational contexts (Dearden, 2014). Unless otherwise specified, the response format for all items, including demographic variables, was a 7-point Likert-type scale. This response format was employed as opposed to the 5-point Likert scale used in previous CAAS studies to provide participants a wider range of response anchors to choose from and to also minimize neutral responses in the scale (Matell & Jacoby, 1972). Previous research suggests that limited response options may result in loss of power and difficulty in detecting significant effects (Aguinis, Bommer, & Pierce, 1996).

2.3.1. Career Adapt-Abilities Scale

The CAAS-International form contains 24 items that combine to yield a total score indicating career adaptability (for the items, see Savickas & Porfeli, 2012). The 24 items are divided equally into four subscales that measure the adaptability resources of concern, control, curiosity, and confidence. The item descriptive statistics and loadings from the confirmatory factor model appear in Table 1. The overall scale for the CAAS-International has a reported reliability of .90, which is higher than the subscale reliability

<table>
<thead>
<tr>
<th>Construct</th>
<th>Item</th>
<th>1st-order indicators</th>
<th>Mean</th>
<th>SD</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
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<td>1.</td>
<td>Thinking about what my future will be like</td>
<td>5.11</td>
<td>1.33</td>
<td>.62</td>
</tr>
<tr>
<td></td>
<td>2.</td>
<td>Realizing that today's choices shape my future</td>
<td>5.12</td>
<td>1.17</td>
<td>.77</td>
</tr>
<tr>
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<td>Preparing for the future</td>
<td>5.11</td>
<td>1.18</td>
<td>.76</td>
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<td></td>
<td>4.</td>
<td>Becoming aware of the educational and career choices that I must make</td>
<td>5.23</td>
<td>1.08</td>
<td>.70</td>
</tr>
<tr>
<td></td>
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<td>Planning how to achieve my goals</td>
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<td>1.13</td>
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<td></td>
<td>6.</td>
<td>Concerned about my career</td>
<td>5.17</td>
<td>1.20</td>
<td>.65</td>
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<tr>
<td>Control</td>
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<td>Keeping upbeat</td>
<td>5.26</td>
<td>1.57</td>
<td>.54</td>
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<tr>
<td></td>
<td>2.</td>
<td>Making decisions by myself</td>
<td>5.36</td>
<td>1.24</td>
<td>.73</td>
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<tr>
<td></td>
<td>3.</td>
<td>Taking responsibility for my actions</td>
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<td>1.14</td>
<td>.70</td>
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<td></td>
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<td>1.10</td>
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<td>5.47</td>
<td>1.13</td>
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<td>1.10</td>
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<td>2.</td>
<td>Looking for opportunities to grow as a person</td>
<td>5.31</td>
<td>1.09</td>
<td>.74</td>
</tr>
<tr>
<td></td>
<td>3.</td>
<td>Investigating options before making a choice</td>
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<td>Observing different ways of doing things</td>
<td>5.27</td>
<td>1.17</td>
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<td></td>
<td>5.</td>
<td>Posing deep and important questions</td>
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<td>1.15</td>
<td>.67</td>
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<tr>
<td></td>
<td>6.</td>
<td>Becoming curious about new opportunities</td>
<td>5.36</td>
<td>1.07</td>
<td>.70</td>
</tr>
<tr>
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<td>1.</td>
<td>Performing tasks efficiently</td>
<td>5.33</td>
<td>1.06</td>
<td>.67</td>
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<tr>
<td></td>
<td>2.</td>
<td>Taking care to do things well</td>
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<td>1.14</td>
<td>.71</td>
</tr>
<tr>
<td></td>
<td>3.</td>
<td>Learning new skills</td>
<td>5.59</td>
<td>1.07</td>
<td>.71</td>
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<tr>
<td></td>
<td>4.</td>
<td>Working up to my ability</td>
<td>5.53</td>
<td>1.03</td>
<td>.66</td>
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<tr>
<td></td>
<td>5.</td>
<td>Overcoming obstacles</td>
<td>5.61</td>
<td>1.05</td>
<td>.67</td>
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</table>

<table>
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<tr>
<th>Construct</th>
<th>2nd-order indicators</th>
<th>Mean</th>
<th>SD</th>
<th>Loading</th>
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<tr>
<td>Adaptability</td>
<td>Concern</td>
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<td>.11</td>
<td>.94</td>
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<tr>
<td></td>
<td>Control</td>
<td>5.39</td>
<td>.19</td>
<td>.97</td>
</tr>
<tr>
<td></td>
<td>Curiosity</td>
<td>5.29</td>
<td>.12</td>
<td>.94</td>
</tr>
<tr>
<td></td>
<td>Confidence</td>
<td>5.53</td>
<td>.11</td>
<td>.94</td>
</tr>
</tbody>
</table>

Fit indices: CFI = .90, TLI = .90, RMSEA = .05, SRMR = .04.
Note: N = 380; all of the loadings are statistically significant at α = .001.
estimates for concern (.83), control (.74), curiosity (.79), and confidence (.85) (Saviclas & Porfei, 2012). The reliabilities of the subscales for this sample appear in Table 1. Measured at Time 1, the overall scale from the CAAS-Serbia had a reliability of .85, which is higher than the subscale alphas for concern (α = .86), control (α = .86), curiosity (α = .83), and confidence (α = .84). Overall, the reliabilities are generally higher for this sample relative to the total international sample.

2.3.2. Entrepreneurial self-efficacy

Entrepreneurial self-efficacy was measured by six items from Wilson, Kielul, and Marlin (2007). The respondents were asked to rate their capabilities against their peers (1 = much worse, 7 = much better) in regards to solving problems, managing money, being creative, getting people’s agreements, being a leader, and making decisions. Wilson et al. (2007) reported a Cronbach’s alpha of .70. For this sample, the scale yielded a Cronbach’s alpha of .73.

2.3.3. Entrepreneurial intentions

Entrepreneurial intentions were measured using a two-item scale (1 = strongly disagree, 7 = strongly agree) from Lee, Wong, Foo, and Laiwor (2011). Items were “I have always wanted to work for myself (i.e. self-employed)” and “I have the opportunity to start my own business venture”. Lee et al. (2011) reported adequate reliability (α = .72) and convergent validity with another established measure of entrepreneurial intentions (Kolvereid, 1996: r = .79, p < .01). In this study, the scale yielded a Cronbach’s alpha of .85.

2.3.4. Family business

Consistent with prior research (Zellweger et al., 2011), we asked each participant to respond to the following question: “Does your father or mother run their own business?” (0 = no, 1 = yes).

2.3.5. Controls

We controlled for the gender of the participants (0 = female, 1 = male) because of its influence on Time 3 entrepreneurial intentions. Evidence suggests that women are less likely to pursue entrepreneurial interests than men possibly because they think they lack the required skills (Chen et al., 1998). This may be due to fewer role models (i.e., most entrepreneurs are men) and less exposure to early career experiences related to entrepreneurship (Eyster, 1994).

3. Results

3.1. Descriptive statistics and correlations of the CAAS-Serbia form

The CAAS-Serbia item means and standard deviations suggest that the responses ranged from strong to very strong (M = 5.11 to 6.06). Skewness and kurtosis values for the 24 CAAS-Serbia items ranged from -1.86 to -1.24 and - .60 to .82 respectively suggesting that the items conform to the assumptions of confirmatory factor analysis for this sample. Item means, standard deviations, and factor loadings for CAAS-Serbia items and scales appear in Table 1. Skewness and kurtosis values for the four CAAS-Serbia subscales ranged from -1.75 to -1.46 and - .61 to - .22 respectively. These values suggest that the subscales conform to the assumptions of correlation-based statistics for this sample. Correlations among the adaptability subscales and the adaptability total score ranged from .71 to .92 and were all significant (p < .001, see Table 2).  

3.2. Confirmatory factor analysis

Confirmatory factor analysis (CFA) showed that data for CAAS-Serbia fit the theoretical model very well. The fit indices were RMSEA = .061 and SRMR = .041, which conform to established fit criteria (Hu & Bentler, 1999). These values compare favorably to the fit indices for the CAAS-International model which were RMSEA = .033 and SRMR = .039. The standardized loadings (see Table 1) suggest that all items are strong indicators of the second-order constructs, which are in turn strong indicators of the third order adaptability construct.

Table 2  Correlation table of CAAS dimensions in Time 1.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concern</td>
<td>.51</td>
<td>.29</td>
<td>.79</td>
<td>.80</td>
</tr>
<tr>
<td>Control</td>
<td>.39</td>
<td>.29</td>
<td>.39</td>
<td>.30</td>
</tr>
<tr>
<td>Curiosity</td>
<td>.79</td>
<td>.39</td>
<td>.80</td>
<td>.80</td>
</tr>
<tr>
<td>Confidence</td>
<td>.76</td>
<td>.71</td>
<td>.77</td>
<td>.73</td>
</tr>
<tr>
<td>Career Adaptability</td>
<td>.73</td>
<td>.83</td>
<td>.80</td>
<td>.83</td>
</tr>
</tbody>
</table>

Note: N = 380; all correlations are statistically significant at α = .001.
3.3. Comparison of the CAAS-Australia factor model to the international factor model

Comparing the CAAS-Serbia hierarchical factor model to the model for the CAAS-International indicated that the loadings of first-order items on the second-order factors of adaptability were generally higher. There were a few items that had slightly lower (curiosity #2, confidence #3 and #6, and concern #3) loadings found in the CAAS-International sample. As can be seen in Table 1, the second-order constructs in the CAAS-Serbia sample obtained higher loadings overall compared to the CAAS-International sample, with concern (CAAS-Serbia = 54; CAAS-International = 78) and control (CAAS-Serbia = 97; CAAS-International = 86) exhibiting the greatest difference in loading between the Serbian and international samples.

3.4. Test–retest reliability

To examine the temporal stability of the CAAS-Serbia, we calculated test–retest reliabilities using Pearson product moment correlations based on a 4-month interval. For this analysis, we used the final sample of 180 students with complete Time 1 and Time 3 career adaptability data. Table 3 presents estimates of internal consistency and test–retest reliabilities for the CAAS-Serbia total score and subscales. All subscales and the total score yielded good internal consistency reliabilities (α = .79 to .93) well above the recommended standard of .70 (DeVellis, 2003). Similarly, test–retest reliabilities were high for all four subscales of concern (r = .76, p < .001), control (r = .78, p < .001), curiosity (r = .75, p < .001), and confidence (r = .68, p < .001), well above the standard of .50 for high correlations (Cohen & Cohen, 1983). Test–retest reliability for the overall CAAS-Serbia was high and statistically significant (r = .85, p < .001).

3.5. Hypotheses tests

Although it would have been ideal to use structural equation modeling (SEM), the sample size for this study was smaller relative to the number of parameters to be estimated, resulting in insufficient power required for structural model estimation (Westland, 2010). Given this, we tested the hypothesized relationships using the PROCESS macro developed by Hayes (2013). Descriptive statistics, zero-order correlations, and reliability coefficients of the study variables appear in Table 4. Consistent with Hypothesis 1, career adaptability related positively to Time 3 entrepreneurial intentions (β = .62, r = .30, p < .001) even after controlling for gender. Overall, Hypothesis 1 was supported.

Hypothesis 2 proposed that the indirect relationship between Time 1 career adaptability and Time 3 entrepreneurial intentions through Time 2 entrepreneurial self-efficacy is stronger for those whose parents do not run a family business. The indirect effect between career adaptability and Time 3 entrepreneurial intentions was significant (indirect effect = .20, 95% CI from .09 to .38). The direct effect of career adaptability on Time 3 entrepreneurial intentions also remained significant (direct effect = .42, p < .01), indicating partial mediation. We then examined whether the strength of this mediated relationship depends on the presence or absence of a family business (i.e., family business as a second-stage moderator). The cross-product term (Time 2 entrepreneurial self-efficacy × family business) was significantly associated with Time 3 entrepreneurial intentions (β = .52, r = .36, p < .05). The conditional indirect effect between Time 1 career adaptability and Time 3 entrepreneurial intentions through Time 2 entrepreneurial self-efficacy was significantly stronger for those without a family business (indirect effect = .34, SE = .10, 95% CI: .17 to .58) compared to those without a family business (indirect effect = .10, SE = .09, 95% CI: .07 to .28). Fig. 1 shows that for these participants whose families run a business, there was a stronger positive relationship between entrepreneurial self-efficacy and entrepreneurial intentions, (175) = 4.71, p < .001, while that positive relationship was weaker for those participants without a family business, (175) = 3.32, p = .04. Overall, Hypothesis 2 was supported.

Table 3

<table>
<thead>
<tr>
<th>Mean</th>
<th>SD</th>
<th>α</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time 1 Concern</td>
<td>5.03</td>
<td>.90</td>
<td>.92</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1 Control</td>
<td>5.17</td>
<td>.94</td>
<td>.94</td>
<td>.69</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1 Curiosity</td>
<td>5.08</td>
<td>.87</td>
<td>.89</td>
<td>.62</td>
<td>.70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1 Confidence</td>
<td>5.22</td>
<td>.84</td>
<td>.81</td>
<td>.66</td>
<td>.67</td>
<td>.65</td>
<td></td>
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<tr>
<td>Time 1 Career adaptability</td>
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<td>.75</td>
<td>.83</td>
<td>.85</td>
<td>.89</td>
<td>.86</td>
<td>.84</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 3 Concern</td>
<td>5.12</td>
<td>.87</td>
<td>.79</td>
<td>.76</td>
<td>.59</td>
<td>.49</td>
<td>.46</td>
<td>.67</td>
<td></td>
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</tr>
<tr>
<td>Time 3 Control</td>
<td>5.19</td>
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<td>.79</td>
<td>.68</td>
<td>.78</td>
<td>.63</td>
<td>.59</td>
<td>.78</td>
<td>.65</td>
<td></td>
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<tr>
<td>Time 3 Curiosity</td>
<td>5.14</td>
<td>.85</td>
<td>.81</td>
<td>.53</td>
<td>.64</td>
<td>.75</td>
<td>.55</td>
<td>.72</td>
<td>.57</td>
<td>.67</td>
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<tr>
<td>Time 3 Confidence</td>
<td>5.44</td>
<td>.86</td>
<td>.83</td>
<td>.80</td>
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<td>.60</td>
<td>.70</td>
<td>.73</td>
<td>.56</td>
<td>.71</td>
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<tr>
<td>Time 3 Career adaptability</td>
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<td>.73</td>
<td>.83</td>
<td>.75</td>
<td>.72</td>
<td>.73</td>
<td>.67</td>
<td>.85</td>
<td>.82</td>
<td>.89</td>
<td>.85</td>
</tr>
</tbody>
</table>

Note: N = 180; all correlations are statistically significant at α = .001.
4. Discussion

4.1. Psychometric properties of the Career Adapt-Abilities Scale-Serbia

The CAAS-Serbia form demonstrated sound psychometric properties as indicated by its full scale and subscales' adequate to excellent internal consistency estimates. Stability as measured by test-retest reliability on a subset of sample was high over a 4-month span. In the case of the means reported herein, the values are higher as compared to other CAAS validation studies because a 7-point Likert scale was adapted in the current study to reduce neutral responses and prevent loss of power (Aguinis et al., 1996; Matell & Jacoby, 1972). A 7-point Likert scale was also used to provide participants with more response options in a multi-item scale such as CAAS (Dawes, 2008). The overall responses, nevertheless, range from strong to very strong and are comparable to CAAS-International results. The current form demonstrates a coherent multidimensional and hierarchical structure that fits the theoretical model and linguistic explanation of career adaptability resources. Our findings also contribute to the existing nomological net by providing convergent validity evidence between adaptive competencies, entrepreneurial self-efficacy, and entrepreneurial intention formation over and above the influence of gender. It supports the theoretical assumption that career adaptability facilitates successful adjustment to developmental vocational tasks such as defining a career choice (Savickas, 2013).

As for the factor loadings, all career adaptability resources were generally higher relative to the CAAS-International sample which could be reflective of contextual boundary conditions or sample characteristics. Specifically, concern (.94) and control (.97) demonstrated the greatest difference and were salient in our sample of young Serbians. In addition to the political instability and economic uncertainty, there exists a major skill mismatch (i.e., underemployment) in the Serbian labor market, with the supply of educated youth far exceeding the limited number of employment opportunities (Prokopenko, 2008). As a result of these unfavorable market conditions, young Serbians are prompted to develop concern for their future and to increase personal responsibility in directing their career. This variation in the development and salience of career adaptability is expected since "countries vary in the degree to which they prompt the formation of adaptability because they provide different opportunities and imperatives to develop and express psychosocial resources and transactional competencies" (Savickas & Porfeli, 2012, p. 3). These proposed explanations and boundary conditions of career adaptation, however, warrant further empirical testing. Nevertheless, the current findings generally support the structural model of career adaptability thereby contributing to the growing evidence of construct validity and cross-national measurement equivalence of CAAS.

![Fig. 1. The interaction between Time 2 entrepreneurial self-efficacy and Family business in predicting Time 3 entrepreneurial intentions.](image-url)
4.2. Pattern of results

The results provide strong support for the invaluable role of adaptability in career development. It confirms that career adaptability positively predicted entrepreneurial self-efficacy and entrepreneurial intentions over time. Career adaptability is a transactional resource that instills the will and skill to successfully manage and mobilize one’s career development. It enables the resolution of complex vocational tasks and prompts occupational choice that is congruent with one’s abilities and interests (Savickas, 2013). Thus, career adaptability is instrumental in entrepreneurial intention formation since it necessitates the enactment of considerable self-regulatory competencies (e.g., career planning and decision-making). This finding dovetails with previous studies on organizational careers suggesting that career adaptability increases the likelihood of successful transition from school to work as indicated by better management of career concerns (Credé, Fallon, & Hood, 2000), high employability (de Gunz & Choi, 2013), job search fit (Guin et al., 2013) and career success (Tolentino, Garcia, Restubog, Borda, & Tong, 2013; Zachar, 2014).

Career adaptability is also viewed as a core capital reflective of competencies acquired through experience and education (Savickas & Porfilio, 2012). Higher levels of adaptive competence influence entrepreneurial intent as it also improves a young entrepreneur’s perceived competence and readiness to perform generic entrepreneurial tasks. Since career adaptability pertains to the perception that one possesses the transactional resources to carry out vocational developmental tasks, it exerts a positive influence on entrepreneurial self-efficacy. This in turn informed the development of entrepreneurial intentions. Indeed, individuals who consider themselves adaptive and efficacious in performing entrepreneurial roles are more empowered to formulate well-formed business intentions. As expected, entrepreneurial self-efficacy mediated the relationship between career adaptability and entrepreneurial intentions. This finding corroborates results from prior studies indicating the pivotal role of self-efficacy in early career decision making (Bandura et al., 2001; Garcia, Restubog, Telepacio, Tolentino, & Rafferty, 2012; Guan et al., 2013) and entrepreneurial entrance (Chen et al., 1998; Zhao et al., 2008). Indeed, the self-regulative resources inherent in career adaptability positively influence the socio-cognitive process underlying the formation of entrepreneurial intentions.

Furthermore, the significant indirect relationship is stronger for those with prior exposure to family business. There are several reasons for this finding. According to Sardesai and Corbett (2011), a family business can offer firm-specific human capital (e.g., existence of role models, vicarious learning opportunities, feedback, support, and mentoring) that contributes to developing an individual’s entrepreneurial intentions. Family can also be a major source of start-up capital and investment (Phuaprasert, Huang, Olsosy, Jing, & Welsch, 2001). As a result of the opportunities to observe and gain favorable evaluations about the benefits of running a business, especially in terms of self-esteem, job security, and perceived satisfying income, an individual becomes more motivated to engage in entrepreneurial activities (Schröder, Schmitt-Rodemeier, & Arnsd, 2011). In other words, individuals with exposure to family business will have better access to resources and develop a stronger willingness to invest time and effort in running a business venture for their own (Zielke, et al., 2011). In sum, the observed pattern of relationships supporting our predictions is robust in light of the time-lagged data collection which emphasizes the change process and time elements necessary to test antecedents of entrepreneurial intentions.

4.3. Limitations and future research

There are a number of limitations that should be noted in light of the present findings. Current generalizability is limited to university students for whom initiating a business venture appeals as a viable career option. Prior studies have investigated predictors of entrepreneurial intentions among university students because they are a valuable group of future entrepreneurs and a focus group of entrepreneurship education (Hirschi, 2013). Correspondingly, we focused on modeling the formation of entrepreneurial intentions among university students using a career perspective. Research evidence suggests a strong association between intent and behavior in entrepreneurship including early career intent as a good predictor of entrepreneurial behavior (Trice, 1991). We acknowledge, however, that not all individuals will act upon these intentions formed early in their career until they have acquired a sufficient level of mastery to launch a business venture (Boyd & Voss, 1994). As such, future research could examine the role of career adaptability in entrepreneurial re-entry and continuance since individual attributes associated with occupational choice are also relevant for career persistence. Another interesting area of future research is examining adaptation among episodic entrepreneurs as well as those transitioning between entrepreneurial and organizational careers. Indeed, Savickas (2013) noted that the formation and use of career adaptability is bounded by economic, societal, and institutional conditions. Our study only accounted for prior exposure to family business as a contextual resource. We encourage future studies to explore other boundary conditions (e.g., societal norms, state regulations, economic reforms) that promote or constrain the influence of career adaptability in initiating business ventures. A better understanding of career adaptation in entrepreneurship can be gained from examining the development and implementation of adaptive competencies across career stages, cultural settings, and varying phases of business ventures.

4.4. Implications for theory and practice

The growing interest in entrepreneur’s beliefs and decision-making helps us understand factors that contribute to entrepreneurial activity. Our research model and findings address the gap in our knowledge of what drives entrepreneurial initiative among young people in a developing country. While macro-level research on business development in such conditions exists, we believe our study is unique in that we explored psychosocial antecedents and socio-cognitive mechanisms of entrepreneurial intentions. Indeed,
adaptable and efficacious individuals are more likely to form intentions as they possess the resources to surmount business impediments.

The research findings also have important practical implications. First, the validation of CAAS builds confidence for its usefulness as a tool for researchers and practitioners who would like to quantitatively measure adaptability resources among university students and potential entrepreneurs in developing economies. The transition process to market economy in these countries can generate positive attitude towards entrepreneurship, as young citizens plan to run their own businesses to fill in the gap in the workforce (Radojevic-Svetly, 2011). The significant role of career adaptability and entrepreneurial self-efficacy in predicting entrepreneurial intentions also confirms its utility as an aid for career decision-making and personal resource for promoting entrepreneurial proactivity. The malleable nature of career adaptability and entrepreneurial self-efficacy, unlike stable personality traits, makes it a sustainable and dynamic personal resource that can be developed over time. Career adaptability enables potential entrepreneurs to be responsive to the changing demands of business environments. Thus, we encourage entrepreneurship educators, counselors, and policy makers to incorporate in their programs a wide array of developmental approaches that foster perceived competence to pursue an entrepreneurial career and adaptive readiness to thrive amidst economic challenges and business complexities.

We acknowledge that design and implementation needs to incorporate dynamic career and intervention strategies that strengthen adaptive competency and entrepreneurial self-efficacy in addition to traditional technical entrepreneurial training. For instance, USAID has partnered with the National Employment Service, ERSTE Bank and SMART Kolektiv to implement the Youth Business Serbia Program with some early success. Hundreds of budding entrepreneurs have gained access to training in business-related subjects, mentorship, assistance, study tours, and funding opportunities (USAID, 2015). Entrepreneurship courses have also been incorporated into the curricula of vocational schools via the Business Innovation Program run by the Serbian Ministry of Education and Science and the Norwegian government (Urmanic, 2011). In such context, career adaptability can be developed by engaging in time perspective workshops that foster future orientation and anticipatory planning (i.e., concerns); business decision-making training that instills personal responsibility (i.e., control); a colloquium with entrepreneurs and job simulations that provide realistic information on entrepreneurial activities (i.e., curiosity), and occupational problem solving exercises that build self-esteem (i.e., confidence). Responsive and strategic interventions could also be developed from using CAAS as a needs assessment tool that diagnoses career development problems (e.g., indifference, indecision, unrealism, and inhibition) associated with entrepreneurial avoidance, inertness, or discontinuation. Furthermore, young entrepreneurs can be empowered to persist in complex business environments by strengthening their entrepreneurial self-efficacy (Chen et al., 1998; Krueger & Brazeal, 1994). Authentic learning opportunities (e.g., real-life business design and implementation) and role models (e.g., media exposure and personal interaction with successful entrepreneurs) are key experiential sources of entrepreneurial self-efficacy and should be emphasized in entrepreneurial training and development. Collectively, our study has shown that career adaptability is a vital personal resource for enacted a self-directed entrepreneurial career that hinges on self-regulative resources to navigate volatile business environments successfully.

References


Validation of the Career Adapt-Abilities Scale and an examination of a model of career adaptation in the Philippine context

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ABSTRACT

This paper presents the validation of the Career Adapt-Abilities Scale (CAAS) in the Philippine context. The CAAS consists of four subscales, with six items each, measuring self-regulative psychosocial resources (e.g., concern, curiosity, control, and confidence) for coping with occupational tasks and transitions. Filipino university students (N = 455) and working adults (N = 405) participated in the study. Internal consistency estimates for the full scale and subscales ranged from .70 to .90. Confirmatory factor analyses supported the multidimensional and hierarchical model of career adaptability. The factor structure was similar to that obtained from the CAAS international validation from 18 countries. Results also suggested that career adaptability was positively associated with adaptivity in the form of tenacious goal pursuit and flexible goal adjustment as well as with adaptation outcomes of career satisfaction and promotability. Overall, the findings confirm the utility of CAAS in the Philippine context and support the model that states higher levels of personal adaptivity (willingness) and career adaptability (competence) relate to better adaptation outcomes in terms of career success.

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1. Introduction

The Career Adapt-Abilities Scale (CAAS) is a 24-item instrument designed to measure the psychosocial construct of career adaptability in different countries. Each of the four subscales has six items which measure the adapt-ability resources of concern, control, curiosity and confidence. Existing validation work spanning across 18 countries demonstrated the scale's excellent reliability and cross-national measurement equivalency (Savickas & Porfeli, 2012). However, further validation studies are necessary because “countries vary in the degree to which they prompt the formation of adaptability because they provide different opportunities and imperatives to develop and express psychosocial resources and transactional competencies” (Savickas & Porfeli, 2012, p.3). Accordingly, this paper aims to contribute to this line of work by examining the construct validity of CAAS along with the fit of its multi-dimensional and hierarchical model in a non-Western context such as the Philippines. This ongoing development in career adaptability research also provides an opportunity for elaborating its nomological network in various contexts. Thus, the current study investigates the relationship of career adaptability with other elements in the overall model of career adaptation. The model states that higher levels of adaptation (outcome) are expected for those who are willing (adaptive) and able (adaptability) to perform behaviors that address changing conditions (adapting) (Savickas & Porfeli, 2012). This study examines the relationship between adaptivity (willingness) and adaptability (able), with the expectation that individuals who...
are more willing to adapt their behaviors will have developed more competencies or adapt-abilities. In this study, adaptivity is operationally defined as tenacious goal pursuit and flexible goal adjustment. Furthermore, we also examine the relationship between adaptivity and adaptability with the adaptation outcomes of career satisfaction and promotability.

As a set of transactional competencies, it is important to describe the contextual contingencies that prompt the development of adapt-ability resources. Thus, the succeeding section provides a brief description of the Philippine work context, where pertinent issues such as economic uncertainty and underemployment emphasize the relevance of career adaptability.

1.1. The Philippine context

The Philippines, with a burgeoning population of roughly 95 million, has a competitive and globalized workforce (United Nations Statistics Division, 2011). Unlike most developed countries confronted with an aging workforce, the country has a growing working age population of 64 million (National Statistics Office, 2013). The Philippines has shown relative resilience during the global economic crisis, compared to its neighboring countries in the ASEAN region, because of the high remittances coming from its large expatriate workforce. This steady recovery is also demonstrated by an increase in labor participation and upward employment trend in its industries (e.g., construction, manufacturing, hospitality, professional and business services; Bureau of Labor and Employment Statistics, 2013).

Despite this promising economic growth, the Philippines remains vulnerable as it confronts perennial labor issues as well as impending labor market changes and economic crisis (Sison & San Andres, 2009). Specifically, the quality of within-country employment (e.g., compensation, work hours, job-skills match) remains a pressing concern as indicated by its surging underemployment rate and prevailing job-skills mismatch (Sugiyarto, 2007). Recent national surveys indicate that more employed Filipinos continue to express their desire to obtain additional working hours, jobs or income while new graduates struggle in securing a job commensurate to their skills (National Statistics Office, 2011). Consequently, a large portion of the labor force seeks work opportunities outside the Philippines because of fierce competition and inadequacy of sufficient remuneration within the country’s labor market. Overall, these environmental conditions influence an individual’s adaptability by either promoting or constraining career-related resources or options.

The uncertainties instigated by the economic situation and competitive employment conditions in turn influence Filipinos’ construal of careers. In the Philippine context, the high regard for family ties and desire for economic mobility primarily shape how individuals enact their careers (Salazar-Clemente, 2002). For instance, early career decisions are associated with active parental involvement (Garcia, Restubog, Tolentino, & Rafferty, 2012; Restubog, Florentino, & Garcia, 2010) and occupational choices are influenced by the desire for economic improvement more than achieving fit and self-actualization (Watts & Fretwell, 2004). As in other developing countries, most workers in the Philippines cannot afford to remain unemployed hence they take on any job that could sustain a living (Sugiyarto, 2007). Career exploration hence is geared towards finding any job that satisfies basic needs rather than searching for options to find a better fitting job and establish a fulfilling career. Then again to break through the country’s prevailing labor issues, the workforce needs to be equipped with resources that enables it to cope and sustain a career in face of disruptions brought about by economic stress or personal circumstances. The more the country’s workforce opens up to global competition, the more it needs to ensure that it is ready to adapt to the demands of the constantly evolving work context.

1.2. Career adaptability

More than ever, adaptability is an essential competency as today’s workers confront frequent transitions and less definable prospects throughout the span of their career (Hall & Melvin, 1995; Savickas, Nuts, Rosier, Dams, & Duarte, Guichard, et al., 2009). Career adaptability is a relevant construct as it facilitates the coping and proactive search for a better job which is imperative in the Philippine context. Specifically, it enables the search for job opportunities and creation of options to improve one’s career (Klehe, Zikus, van Vuur, Koen, & Boyens, 2012). Anchored on careers construction theory, career adaptability is conceptualized as a set of “attitudes, competencies, and behaviors that individuals use in fitting themselves to work that suits them” (Savickas, 2013, p.65). It is a multidimensional psychosocial construct comprised of four self-regulatory strengths that enables the individual to prepare for current and anticipated occupational changes. Career concern pertains to a time perspective towards preparation for the future such as developing a career vision. Career control indicates a sense of ownership and responsibility to exert influence on one’s career. Career curiosity refers to interest in exploring possible sources and opportunities in one’s environment. Lastly, career confidence pertains to the pursuit of aspirations and anticipation of success in face of obstacles. These adapt-ability resources, as measured in the CAAS, are necessary for negotiating career transitions and achieving person-environment integration (Savickas & Portela, 2012).

Career construction theory postulates an interplay among adaptive readiness, adapt-ability resources, and adaptation outcomes (Savickas, 2013). To examine this overall model of career adaptation, we test the relationship of career adaptability to willingness to adapt or adaptivity in terms of tenacious goal pursuit and flexible goal adjustment as well as both of their relations to the adaptation outcomes of career satisfaction and promotability.

1.2.1. Career adaptivity and career adaptability

In this study, we specifically use the dual-process model of assimilative and accommodative coping to conceptualize willingness to adapt. Specifically, the assimilative style of coping is operationalized as tenacious goal pursuit (TGP) which pertains to a “tendency to tenaciously pursue goals even in the face of obstacles and under high risk of failure” (Brandstätter & Renner, 1990, p.61). Conversely, the accommodative style of coping corresponds with flexible goal adjustment which denotes a “tendency to positively reinterpret initially aversive situations and to relinquish blocked goal perspectives easily” (Brandstätter & Renner, 1990, p.61). These coping modes, notwithstanding its divergent functions, work in complementary ways in facilitating
congruence between an individual’s perceived and desired conditions (Brandstätter & Rothermund, 2002). Both coping modes are significantly and positively associated with psychological attributes such as life satisfaction, optimism, self-acceptance, and happiness (Brandstätter & Renner, 1996; Mühlberg & Kom, 2004). Essentially, the dynamic interplay and balance between the two approaches is relevant to adaptability (Brandstätter, 2009), and thus should relate to adaptability and adaptation outcomes. The rationale for using coping modes to measure adaptability is drawn from the idea that these dual coping processes motivate willingness to change and prompt the implementation of adaptability resources. Conceptually, assimilative attempts are contingent on perceived control while accommodative efforts are exerted towards regaining influence over life’s circumstances. In line with Savickas’ (2013) theory of career construction, the theoretical underpinnings of both coping modes are anchored on self-regulation capacities of individuals to respond and adjust to life’s circumstances (Brandstätter, 2009). More specifically, the self-determination nature of career adaptability and assimilative tenacity (e.g., TCP) facilitates the pursuit of aspirations despite obstacles and changes. Correspondingly, the capacity to negotiate transitions and adjust into new circumstances inherent in career adaptability is also congruent with positive readjustments integral in accommodative flexibility (e.g., FGA). Based on these theoretical considerations, it is expected that tenacious goal pursuit (Hypothesis 1a) and flexible goal adjustment (Hypothesis 1b) relate positively with the four dimensions and overall adaptability. Because adaptivity is driven by an individual’s need to accommodate career disequilibrium (Savickas & Porfeli, 2012), it is also expected that the correlation would be stronger for flexible goal adjustment than for tenacious goal pursuit (Hypothesis 1c).

1.2.2. Career adaptation outcomes

Adaptivity and adaptability are focal constructs in explicating career adaptation in a continuously evolving and competitive labor market. An individual must be ready to enact change as well as possess psychosocial resources to respond successfully to a shifting work context. In career construction theory, adaptation refers to the goodness of fit indicated by success, satisfaction, and development (Savickas & Porfeli, 2012). Thus, we operationalize adaptation using career success outcomes. In this study, we define career success as an evaluative concept of accrued positive attitudinal and behavioral outcomes resulting from one’s work experiences (Seibert, Kraimer, & Liden, 2001). These positive outcomes are indicated by the individual’s subjective appraisals of career satisfaction and likelihood of promotability. Altogether, these key standards of career success have been conceptually and empirically linked with human capital variables such as cumulative educational and professional experience (Judge, Cable, Boudreau, & Bretz, 1995; Ng, Eby, Sorensen, & Feldman, 2005; Wayne, Liden, Kraimer, & Gaf, 1999). As a psychosocial construct, career adaptability is also viewed as a human capital resource comprised of accumulated career competencies and knowledge. Specifically, these adaptability resources facilitate the capacity to “solve unfamiliar, complex, and ill-defined problems presented by vocational tasks, occupational transitions, and work traumas”, thereby promoting desirable career outcomes (Savickas & Porfeli, 2012, p. 2). Moreover, adaptation outcomes are also influenced by willingness to enact change or adaptability.

Career construction theory also posits that successful adaptation is enabled not only by adaptability resources but also by adaptivity readiness, which acts as a stable supportive element in the overall model. Along these lines, we expect that meaningful relationships exist between adaptivity, adaptability, and career adaptation in terms of satisfaction and promotability. This prediction is based on conceptual implications that individuals who are willing and able to adapt are more likely to generate options, fit into new circumstances, and achieve career goals (Savickas, 2013). Such characteristics are likely to influence career advancement and satisfaction. Drawing from these assumptions, we predict that increased willingness to adapt in the form of tenacious goal pursuit and flexible goal adjustment relates with higher levels of career satisfaction (Hypotheses 2a & 2c) and promotability (Hypotheses 2b & 2d). Correspondingly, higher levels of adaptability relate with higher levels of adaptation in the form of career satisfaction (Hypothesis 3a) and promotability (Hypothesis 3b).

1.3. Aims of the current study

While the CAAS international form demonstrated excellent reliability and cross-national measurement equivalence (Savickas & Porfeli, 2012), its validity for use in the Philippine context requires further psychometric analyses. In the research reported here, we analyze the psychometric properties of the CAAS-Philippines form in both university students and employee samples. In addition, we compare the factor structure of the CAAS-Philippines to the multi-dimensional, hierarchical measurement model of the CAAS-International Form 2.0. Finally, the observed relationships between career adaptability, adaptivity (e.g., tenacious goal pursuit and flexible goal adjustment), and adaptation outcomes (e.g., career satisfaction and promotability) are also reported to provide convergent validity evidence and test the overall model of career adaptation.

2. Method

2.1. Participants

2.1.1. Sample

Participants included 289 undergraduate university students from management courses at a large private university in the Philippines. A member of the research team explained the purpose of the study, administered, and collected completed questionnaires during class time. In exchange for their participation, each student earned extra class credit. The sample comprised 57% females with a mean age of 18.64 years (SD = 1.97) and 40.80% of the students in their junior year.
2.1.2. Sample 2

Participants were 405 full-time employees who were enrolled in various postgraduate academic programs (e.g., business, education, engineering, and computer science) in a large university in the Philippines. As an inclusion criterion, we specified that participants had to be employed full-time. The completed surveys were returned to the research team via a self-addressed, stamped envelope. The sample consisted of 56% females with a mean age of 31.71 years and an average tenure of 5.18 years.

2.2. Measures

Survey items were presented in English because this language is used by a vast majority of the Filipino population and is predominantly used in educational contexts (Bernardo, 2004). Multi-item scales were used to ensure adequate measurement of each study variable. Unless otherwise specified, the response format for all items, excluding demographic variables, was a 7-point Likert-type scale (1 = strongly disagree; 7 = strongly agree). This response format was employed as opposed to the 5-point Likert scale used in previous CAAS studies to provide participants a wider range of response anchors to choose from and to also minimize neutral responses in the scale (Matell & Jacoby, 1972; Previous research suggests that limited response options may result in loss of power and difficulty in detecting significant effects (Aguinis, Bennett, & Pierce, 1998).

2.2.1. Career Adapt-abilities Scale (Savickas & Porfeli, 2012)

The CAAS-International form contains 24 items that combine to yield a total score indicating career adaptability (for the items, see Savickas & Porfeli, 2012). The 24 items are divided equally into four subscales that measure the adaptability resources of concern, control, curiosity, and confidence. The item descriptive statistics and loadings from the confirmatory factor model for Samples 1 and 2 appear in Tables 1 and 2, respectively. The overall scale for the CAAS-International has a reported reliability of .92, which is higher than the subscale reliability estimates for concern (.83), control (.74), curiosity (.79), and confidence (.85) (Savickas & Porfeli, 2012). The reliabilities of the subscales for Samples 1 and 2 appear in Tables 1 and 2, respectively. For Sample 1, the overall scale from the CAAS-Philippines had a reliability of .90, which is higher than the subscale alphas for concern (α = .91), control (α = .87), curiosity (α = .90), and confidence (α = .94). Similarly for Sample 2, the overall scale from the CAAS-Philippines had a reliability of .97, which is higher than the subscale alphas for concern (α = .92), control (α = .89), curiosity (α = .91), and confidence (α = .93). Overall, the reliabilities are generally higher for the two Philippine samples (both student and employee) relative to the total international sample.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Item (first-order indicators)</th>
<th>Mean</th>
<th>SD</th>
<th>Loading</th>
<th>α</th>
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</thead>
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<td>1.23</td>
<td>.71</td>
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<td></td>
<td>2. Believing that today's choices shape my future</td>
<td>5.67</td>
<td>1.15</td>
<td>.72</td>
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<td>1.23</td>
<td>.76</td>
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<td></td>
<td>4. Becoming aware of the educational and career choices that I must make</td>
<td>5.73</td>
<td>1.06</td>
<td>.83</td>
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<td></td>
<td>5. Planning how to achieve my goals</td>
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<td>1.38</td>
<td>.86</td>
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<td>6. Concerned about my career</td>
<td>5.82</td>
<td>1.21</td>
<td>.79</td>
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<td></td>
<td>3. Taking responsibility for my actions</td>
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<td>4. Sticking up for my beliefs</td>
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<td>1.15</td>
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<td></td>
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<td>1.07</td>
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<td></td>
<td>6. Doing what's right for me</td>
<td>5.89</td>
<td>1.02</td>
<td>.77</td>
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<td>Curiosity</td>
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<td>1.21</td>
<td>.76</td>
<td>.90</td>
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<td>5.80</td>
<td>1.14</td>
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<td></td>
<td>3. Investigating options before making a choice</td>
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<td>1.11</td>
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<td>4. Observing different ways of doing things</td>
<td>5.70</td>
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<td>5. Probing deeply into questions I have</td>
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<td></td>
<td>6. Becoming curious about new opportunities</td>
<td>5.77</td>
<td>1.09</td>
<td>.77</td>
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<td>3. Learning new skills</td>
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<td>5. Overcoming obstacles</td>
<td>5.78</td>
<td>1.15</td>
<td>.75</td>
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<td></td>
<td>6. Solving problems</td>
<td>5.78</td>
<td>1.12</td>
<td>.73</td>
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<th>α</th>
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<td>2. Control</td>
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<td></td>
<td>3. Curiosity</td>
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<td>.90</td>
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<td></td>
<td>4. Confidence</td>
<td>5.81</td>
<td>.91</td>
<td>.94</td>
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Note: N = 289; all of the loadings are statistically significant at α = 0.001.


Table 2  
Career Adapt-Abilities Scale: items, descriptive statistics, standardized loadings, and internal consistency reliabilities in Sample 2 (employee sample).  

<table>
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<th>Construct</th>
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<td>2. Realizing that today’s choices shape my future</td>
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<td>3. Preparing for the future</td>
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<td>5. Planning how to achieve my goals</td>
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<td>.95</td>
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</tr>
</tbody>
</table>

Note: N = 405; all the loadings are statistically significant at α = .001.

2.2.2. Tenacious goal pursuit and flexible goal adjustment (Mueller & Kim, 2004)  
Tenacious goal pursuit and flexible goal adjustment were measured using two scales with 15 items each. Participants were asked to indicate how strongly they agreed with statements such as: “I stick to my goals and projects even in face of great difficulties” (tenacious goal pursuit), and “After a serious setback, I soon turn to new ‘goals’” (flexible goal adjustment). The internal consistencies were .79 for tenacious goal pursuit and .83 for flexible goal adjustment in Sample 1 and .77 for tenacious goal pursuit and .80 for flexible goal adjustment in Sample 2.

2.2.3. Career satisfaction (Greenhaus, Parasuraman, & Wormley, 1990)  
Career satisfaction in Sample 2 was measured using a 5-item scale. Participants were asked to rate the extent to which they agreed with statements such as: “I am satisfied with the success I have achieved in my career” and “I am satisfied with the progress I have made toward meeting my career goals”. Internal consistency for this scale in this sample was .84.

2.2.4. Promotability  
Promotability in Sample 2 was measured using 4-items drawn from previous research (Restubog, Bordia, & Bordia, 2011; Shore, Bartolotta, & Shore, 1985). A sample item is: “I am likely to be promoted to a higher position sometime during my career”. Internal consistency for this scale was .84.

Table 3  
Means, standard deviations, and correlations of the study variables in Sample 1 (student sample).  

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<tbody>
<tr>
<td>Career adaptability</td>
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<tr>
<td>1. Concern</td>
<td>5.78</td>
<td>.98</td>
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<td>2. Control</td>
<td>5.69</td>
<td>.90</td>
<td>.98</td>
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<td>3. Curiosity</td>
<td>5.73</td>
<td>.91</td>
<td>.91</td>
<td>.71</td>
<td></td>
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<td></td>
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<tr>
<td>4. Confidence</td>
<td>5.81</td>
<td>.91</td>
<td>.72</td>
<td>.69</td>
<td>.92</td>
<td></td>
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<tr>
<td>5. Adaptability</td>
<td>5.75</td>
<td>.91</td>
<td>.91</td>
<td>.86</td>
<td>.92</td>
<td>.90</td>
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<tr>
<td>Adaptability</td>
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<td></td>
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<tr>
<td>6. Tenacious goal pursuit</td>
<td>4.67</td>
<td>.74</td>
<td>.39</td>
<td>.33</td>
<td>.27</td>
<td>.35</td>
<td>.38</td>
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</tbody>
</table>

Note: N = 280; all correlations are statistically significant at α = .001.
3. Results

3.1. Descriptive statistics and correlations of the CAAS-Philippines

The CAAS-Philippines item means and standard deviations for both student and employee samples suggest that the typical response was in the range of strong to very strong. Skewness and kurtosis values for the 24 CAAS-Philippines items ranged from (−1.38 to −.36) to (−3.8 to 1.55) respectively for Sample 1 and from (−1.18 to −.51) to (−.02 to 1.62) respectively for Sample 2, suggesting that the items conform to the assumptions of confirmatory factor analysis for both samples. Scale means, standard deviations, and zero-order correlations for all study variables appear in Tables 3 and 4 for Samples 1 and 2 respectively. In Sample 1, skewness and kurtosis values for the four CAAS-Philippines subscales ranged from (−1.11 to −.63) to (−3.6 to 2.24) respectively. In Sample 2, skewness and kurtosis values for the four CAAS-Philippines subscales ranged from (−.77 to −.49) to (−.23 to .49) respectively. These values suggest that the subscales conform to the assumptions of correlation-based statistics for this sample. Correlations among the adaptability scales were significant (p < .001) for both Sample 1 and Sample 2 (see Tables 3 and 4). Furthermore, the correlations between the four subscales and the adaptability total score ranged from .86 to .92 in Sample 1, and .88 to .92 in Sample 2 and were all significant (p < .001).

3.2. Confirmatory factor analysis

Confirmatory factor analysis (CFA) showed that data from both Samples 1 and 2 for the CAAS-Philippines fit the theoretical model very well. For Sample 1, the fit indices were RMSEA = .074 and SRMR = .047. For Sample 2, the fit indices were RMSEA = .072 and SRMR = .044. These results from both samples conform satisfactorily to established joint fit criteria (Hu & Bentler, 1999), although the degree of fit is slightly lower than the fit for the CAAS-International model (RMSEA = .053 and SRMR = .039; Savickas & Porfeli, 2012 Table 2, row M1b). For both samples, the standardized loadings (see Tables 1 and 2) suggest that all items are strong indicators of the second-order constructs, which are in turn strong indicators of the third-order adaptability construct.

3.3. Comparison of the CAAS-Philippines factor model to the international factor model

Comparing the CAAS-Philippines Sample 1 (student sample) hierarchical factor model to the model for the CAAS-International indicated that, overall, the loadings of first-order items on the second-order factors of adaptability were generally higher. There were a few items that were slightly lower (concern #3) or equal to (confidence #5 and #6) the loadings found in the CAAS-International sample. The loadings for the second-order constructs were also generally higher in this sample compared to CAAS-International with the exception of control (Philippines = .84; International = .86). Curiosity showed the greatest difference between Sample 1 of CAAS-Philippines (.57) and international sample (.88), with the international sample showing a weaker loading.

A similar pattern of results was also observed by comparing the CAAS-Philippines Sample 2 (employee sample) hierarchical factor model to the model for the CAAS-International. All the loadings of first-order items on the second-order factors of adaptability were higher for the CAAS-Philippines Sample 2 compared to the CAAS-International. The loadings for the second-order constructs were also higher in this sample compared to CAAS-International sample. Concern (Philippines = .84; International = .78) and curiosity (Philippines = .94; International = .88) showed the greatest difference between Sample 2 of CAAS-Philippines and CAAS-International sample, with the international sample showing a weaker loading.

Table 4

<table>
<thead>
<tr>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<tr>
<td>Career adaptability</td>
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<td></td>
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</tr>
<tr>
<td>1. Concern</td>
<td>5.71</td>
<td>.02</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Control</td>
<td>5.76</td>
<td>.06</td>
<td>.23***</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Curiosity</td>
<td>5.76</td>
<td>.09</td>
<td>.20***</td>
<td>.27***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Confidence</td>
<td>5.87</td>
<td>.09</td>
<td>.23***</td>
<td>.26***</td>
<td>.84***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Adaptability</td>
<td>5.77</td>
<td>.09</td>
<td>.20***</td>
<td>.90***</td>
<td>.91***</td>
<td>.90***</td>
<td></td>
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<td>Adaptability</td>
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<td></td>
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<tr>
<td>6. Tenacious goal pursuit</td>
<td>4.51</td>
<td>.72</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>7. Flexible goal adjustment</td>
<td>4.84</td>
<td>.71</td>
<td>.27***</td>
<td></td>
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<td>8. Procrastination</td>
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</table>

Note: N = 405.

*** p < .001.
3.4. Hypothesis tests

The hypotheses were tested by examining the correlations between adaptivity (i.e., tenacious goal pursuit and flexible goal adjustment), adaptability, and adaptation (i.e., career satisfaction and promotability). As can be seen in Tables 3 and 4, all correlations were significant and in the expected direction. It was proposed that tenacious goal pursuit would be positively associated with adaptability (Hypothesis 1a). In Sample 1, significant positive correlations were found between tenacious goal pursuit and the CAAS subscales of concern (r = .39, p < .001), control (r = .33, p < .001), curiosity (r = .27, p < .001), and confidence (r = .35, p < .001). In Sample 2, a similar pattern of significant positive correlations were also found between tenacious goal pursuit and the CAAS subscales of concern (r = .27, p < .001), control (r = .26, p < .001), curiosity (r = .25, p < .001), and confidence (r = .23, p < .001). Moreover, overall, the correlation between tenacious goal pursuit and overall adaptability was .38 (p < .001) and .28 (p < .001) for Samples 1 and 2, respectively. Overall, Hypothesis 1a was supported.

It was also proposed that flexible goal adjustment would be positively associated with adaptability (Hypothesis 1b). In Sample 1, significant positive correlations were found between flexible goal adjustment and the CAAS subscales of concern (r = .34, p < .001), control (r = .38, p < .001), curiosity (r = .37, p < .001), and confidence (r = .34, p < .001). In Sample 2, a similar pattern of significant positive correlations was also found between flexible goal adjustment and the CAAS subscales of concern (r = .43, p < .001), control (r = .41, p < .001), curiosity (r = .43, p < .001), and confidence (r = .44, p < .001). Furthermore, the correlation between flexible goal adjustment and overall adaptability was .40 (p < .001) and .48 (p < .001) in Samples 1 and 2, respectively. Overall, Hypothesis 1b was supported.

It was further hypothesized that the strength of the relationship between flexible goal adjustment and adaptability would be stronger than the relationship between tenacious goal pursuit and adaptability (Hypothesis 1c). This hypothesis was tested using a procedure for analyzing the difference between the strength of dependent correlations (i.e., correlations obtained from the same group of respondents) as outlined by Steiger (1980). In Sample 1, the difference between the strength of the correlation between flexible goal adjustment and adaptability and tenacious goal pursuit and adaptability was significant (t = 4.64, p < .001). Thus, Hypothesis 1c was partially supported.

In Sample 2, we further proposed that adaptivity would be positively associated with adaptation outcomes operationalized as career satisfaction and promotability. Indeed, tenacious goal pursuit was positively related to career satisfaction (r = .10, p < .05) and promotability (r = .20, p < .001). Thus, Hypotheses 2a and 2b were supported. Similarly, flexible goal adjustment was positively related to career satisfaction (r = .28, p < .001) and promotability (r = .36, p < .001), supporting Hypotheses 2c and 2d.

We also expected that career adaptability would be positively associated with career satisfaction (Hypothesis 3a) and promotability (Hypothesis 3b). As predicted, significant positive correlations were found between the adaptability subscales and career satisfaction: concern (r = .37, p < .001), control (r = .38, p < .001), curiosity (r = .40, p < .001), and confidence (r = .39, p < .001). The correlation between the total adaptability score and career satisfaction was .43 (p < .001), supporting Hypothesis 3a. Similarly, significant positive correlations were found between the adaptability subscales and promotability: concern (r = .40, p < .001), control (r = .52, p < .001), curiosity (r = .50, p < .001), and confidence (r = .52, p < .001). The correlation between the overall adaptability score and promotability was .56 (p < .001), supporting Hypothesis 3b.

4. Discussion

Drawing on the findings of the statistical analyses reported herein, we conclude that the CAAS-Philippines form performs similarly to the CAAS-International form in terms of psychometric properties and factor structure. The full scale and four subscales each demonstrate good to excellent internal consistency estimates and a coherent multidimensional, hierarchical structure that fits the theoretical model and linguistic explication of career adaptability resources.

Data were obtained from two samples to understand if career adaptability, as a set of psychosocial and transactional competencies, is expressed differently by students and employed individuals. The analyses, nonetheless, suggest a similar pattern of results for both samples. In the case of the means, the values reported are higher because a 7-point Likert scale was adopted in the current study to reduce neutral responses and prevent loss of power (Aguini et al., 1996; Matar & Jacoby, 1972). The overall responses, nevertheless, range from strong to very strong and are comparable to CAAS-International results. As regard to factor loadings, the curiosity subscale in Sample 1 (.97) and Sample 2 (.94) showed the greatest difference from the CAAS-International sample (.88). In addition, the concern subscale (.34) in Sample 2 is also higher compared to the International sample (.28). These higher loadings may reflect some cultural or sample characteristics that influence career adaptability. Indeed, Savickas and Porfeli (2012, p. 3) noted that, ‘culture and context may place boundary conditions around adaptability’. In the case of the Philippines, prevailing labor issues such as underemployment and job-skills mismatch have placed career constraints on its workforce. Consequently, such situational factors may have also lead to the sample’s increased career curiosity and concerns. Specifically, this influenced both students and employed samples’ interest to explore alternative scenarios and seek various work opportunities thereby intensifying career curiosity. It likewise may have promoted the collection of personal and contextual information that are relevant for mobilizing one’s career. The working sample demonstrated higher concern, in addition to career curiosity, in response to the unpredictability of the work context. Having a future orientation and career vision is necessary to prepare for the challenges that could possibly impact one’s career (Savickas, 2013). Alternatively, these differences may have been due to the
sample's unique characteristics. For instance, Sample 1 is composed of university students who are about to transition from school to work, hence the higher levels of career curiosity. These proposed explanations, however, warrant further empirical scrutiny.

To test the model of career adaptation, we examined the proposed relationships between career adaptability, adaptability, and adaptation. The observed pattern of significant relationships is consistent with our expectations and largely confirms the convergent validity of CAAS. As predicted, adaptability as indicated by TFG and FGA coping modes is positively related with overall career adaptability and its dimensions. This finding supports the theoretical assumption that self-regulative resources such as control capacities are associated with the execution of these interrelated coping strategies (Brondstedt & Bruner, 1990). Furthermore, an ocular inspection of the correlations suggests that FGA correlated stronger with career adaptability in both samples. These correlations indicate that individuals who rate themselves higher in terms of career-related self-regulative resources also have higher accommodative coping tendencies. Specifically, it suggests that career adaptable individuals are more likely to readjust their personal preferences and goal orientation in face of situational constraints and changes. A comparison of Samples 1 and 2's results, however, shows a notable difference between the adaptability coping modes and career adaptability correlations. On one hand, this prominent distinction between TFG and FGA in the working sample may be attributed to age and having matured or well-established goals that had been readjusted in response to aversive life situations. On the other hand, the younger student sample may have not yet experienced significant transitions that necessitate the readjustment of goals. Being in the early career stage, they are still in the process of defining and enacting their career goals. This pattern of relationships suggests that flexible goal adjustment may be an important marker of adaptivity in adulthood. Overall, the findings indicate that career adaptability is indeed related to adaptivity for coping and negotiating vocational tasks and transitions successfully (Savickas, 2013). Individuals who demonstrate adaptive readiness are, thus, more likely to develop career competencies in the form of adapt-abilities.

Furthermore, we predicted in Sample 2 that adaptability and adaptability are positively associated with career adaptation outcomes. Our results support this contention. As expected, increased levels of both TFG and FGA were found to be positively associated with career satisfaction and promotability. This finding supports the theoretical assumption that increased readiness to adapt relates with higher levels of adaptation (Savickas & Portell, 2012). Specifically, individuals who are willing to engage in adapting behaviors feel more satisfied with their career and anticipate future advancement. As predicted, career satisfaction likewise correlated positively with adaptability. Given that career adaptability is comprised of self-regulatory resources that enable person-environment integration, it is likely to enhance positive attitudes towards one's career thereby increasing overall satisfaction. In the same way, promotability, an indicator of career success, exhibited positive correlations with adaptability suggesting that adaptable individuals have better perceptions of their career advancement. The findings suggest that adaptation in the form of career success (e.g., career satisfaction and promotability) is essentially driven by both adaptivity and adaptability to a changing work context, given that both entail the readiness and capacity to adjust to current as well impending work-related challenges.

Collectively, the current findings support the role of adaptability as a key competency in career management (Hall & Mirvis, 1995; Savickas et al., 2008). Results from the correlational analysis indicate that adaptivity and adaptability are associated with career adaptability as measured by the CAAS-Philippines in a theoretically meaningful way. As a whole, the correlational results can be interpreted as preliminary evidence of construct validity for the CAAS-Philippines and an examination of the overall model of career adaptation. The current study has demonstrated the CAAS-Philippines utility for both university students and working samples. Because career adaptability is a psychosocial construct, further studies are still necessary to replicate these findings across various samples (e.g., unemployed & temporary workers) and career stages (e.g., mid to late career) in order to establish generalizability to other populations and contexts. Additional research is also needed to elaborate the existing nomological network of career adaptability by exploring its links to other related constructs as well as further research on the overall model of adaptation.

In conclusion, the measure in its current form appears to have strong potential for application in career development research and intervention in the Philippines. The present findings lend support for the usefulness of the CAAS-Philippines form as a useful tool for researchers and practitioners who would like to quantitatively measure adaptability resources among university students and working adults. Overall, the promotion of career adaptability through research and practice can further enhance our understanding of self-regulatory competencies that will assist individuals to navigate through transitions in an increasingly complex career context.

References


Appendix D

Participation Information Sheets and Consent Form

The purpose of the study
Good day! We are a team of researchers based at The Australian National University examining people’s experiences at work. We would like to invite you to participate in this research. You are invited to participate in a study of how your thoughts, feelings, and behaviors affect your adjustment to career-related changes and challenges. We hope to develop a better understanding of employees’ career experiences for the purpose of assisting employees to manage career-related challenges in order to make work life more productive, enjoyable, and less stressful. You are selected as a possible participant in this study because you were identified as an employee in the organization.

What is involved?
If you decide to participate, you will be asked to answer a survey packet which consists of demographic questions, and several rating scales. This survey will be used to understand your career experiences. The survey will take 20-30 minutes to complete.

Confidentiality and disclosure of information
Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission, except as required by law. If you give us your permission by signing this document, we plan to publish the results in academic journals and present it in academic conferences. Please note that all information you provide is strictly confidential. In any publication, information will be provided in such a way that you cannot be identified.

Feedback
If you are interested, a summary of research findings will be made available to you by contacting the researchers using the contact details at the bottom of this letter.

Your consent
Your decision whether or not to participate will not prejudice your future relations with the Australian National University. If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without prejudice.

Confidentiality and General Instructions
- This survey is anonymous and voluntary. Please do not write your name on it. You can withdraw from this study at any point in time. Responses to the survey are strictly confidential and will only be seen by the Research Team. Please note that these rating will only be used for research purposes only.
- For this project to be successful, it is necessary for you to respond as honestly as possible, even if the information that you provide is not favorable.

Why an anonymous code?
- To ensure anonymity, we have designed a non-identifying coding system. That way, we do not have to know your name in order to match this survey with future surveys. Please note that we will never share the code with anybody else. Please do not forget to create the anonymous code.
In order to match your responses on this survey with future surveys, we’d like to request for your student ID number and for you to create an anonymous code using the information below. Please note that this code will not be shared with anybody else. Only the principal researcher will have access to the code.

<table>
<thead>
<tr>
<th>EXAMPLE</th>
<th>YOUR RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>The <strong>first two letters</strong> of your father’s <strong>first name</strong></td>
<td>My father’s first name is <strong>John</strong> [J] [O]</td>
</tr>
<tr>
<td></td>
<td>My father’s first name is <strong>Jo</strong> [J] [O]</td>
</tr>
<tr>
<td>The <strong>last two letters</strong> of your mother’s <strong>first name</strong></td>
<td>My mother’s first name is <strong>Marie</strong> [I] [E]</td>
</tr>
<tr>
<td></td>
<td>My mother’s first name is <strong>Marie</strong> [I] [E]</td>
</tr>
<tr>
<td>The <strong>day (in the month)</strong> of your <strong>birthday</strong></td>
<td>Born December 3 [0] 1970 [3]</td>
</tr>
<tr>
<td></td>
<td>Born December 3 1970 [0] 1970 [3]</td>
</tr>
</tbody>
</table>

**Student ID Number**

Retrieval
Please place the completed survey in the enclosed envelope and seal the envelope. A member of the research team will be collecting it personally from you.

If you have any questions, please feel free to ask us. If you have any additional questions later, you may contact any of the following researchers: Laramie Tolentino at the Research School of Business, ANU [Phone (02)-6125-7279; email: laramie.tolentino@anu.edu.au; Professor Simon Lloyd Restubog at the Research School of Business, ANU [Phone (02)-6125-7319; email: simon.restubog@anu.edu.au; Professor Prashant Bordia at the Research School of Business, ANU [Phone (02)-6125-7282; email: prashant.bordia@anu.edu.au].

If you have any concerns regarding the way the research was conducted you can also contact the ANU Human Research Ethics Committee: Human Ethics Officer, Human Research Ethics Committee, The Australian National University [Phone (02)-6125-7945; email: Human.Ethics.Officer@anu.edu.au].

You will be given a copy of this form to keep.
I, ____________________________, consent to taking part in the study above. I understand that my participation is completely voluntary, and that I may withdraw from the study at any time without penalty. The objectives and procedures of the project have been explained to me and I understand them. I understand that it is sometimes essential for the validity of research results not to reveal the true purpose of the research to participants. If this occurs, I understand that I will be debriefed as soon as is practicable after my participation and, at that time, given the opportunity to withdraw from the research and have records of my participation erased. I have been advised that the results of the project may be published but that my personal details will remain confidential. I voluntarily consent to participate, but I understand that I may withdraw from the study anytime.

Name of Participant: ___________________________________
Signature: __________________    Date:  __________________
_______________________________________________

Researcher to Complete:

I, Laramie Tolentino, certify that I have explained the nature and procedures of the research project to ________________________________ and consider that she/he understands what is involved.

Researcher’s Signature: ___________________________    Date: ________________
Appendix E

Materials for Empirical Paper 1

Appendix E.1. Demographic questions
Appendix E.2. Career Adapt-Abilities items
Appendix E.3. Learning goal orientation items
Appendix E.4. Proactive personality items
Appendix E.5. Career optimism items
Appendix E.1. Demographic questions

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>01. What is your gender (please encircle)?</td>
<td>1 Male  2 Female</td>
</tr>
<tr>
<td>02. What is your age (as of your last birthday)?</td>
<td>_____ years old</td>
</tr>
<tr>
<td>03. What is your current year level in the university (please encircle)?</td>
<td>1 Freshmen  2 Sophomore  3 Junior  4 Senior and above</td>
</tr>
</tbody>
</table>
Appendix E.2. Career Adapt-Abilities (CAAS) items

Directions: Different people use different strengths to build their careers. No one is good at everything. Each of us emphasizes some strengths more than others. Please rate how strongly you have developed each of the following abilities.

<table>
<thead>
<tr>
<th>Item #</th>
<th>Description</th>
<th>Not Strong</th>
<th>Strongest</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Thinking about what my future will be like.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Realizing that today’s choices shape my future.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Preparing for the future.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Becoming aware of the educational and career choices that I must make.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Planning how to achieve my goals.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Concerned about my career.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Keeping upbeat.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Making decisions by myself.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Taking responsibility for my actions.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Sticking up for my beliefs.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Counting on myself.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Doing what’s right for me.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Exploring my surroundings.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Looking for opportunities to grow as a person.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Investigating options before making a choice.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Observing different ways of doing things.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Probing deeply into questions I have.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Becoming curious about new opportunities.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Performing tasks efficiently.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Taking care to do things well.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Learning new skills.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Working up to my ability.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Overcoming obstacles.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Solving problems.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>
Appendix E.3. Learning goal orientation items

Directions: Reflect on your experiences while studying in the university and indicate the degree to which the following descriptions apply to you.

<table>
<thead>
<tr>
<th>Item #</th>
<th>Statement</th>
<th>Does not apply at all</th>
<th>Applies completely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>When something at school isn’t working as well as it used to, I ask others for advice or help.</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
<tr>
<td>2</td>
<td>When it becomes harder for me to get the same results at school, I keep trying harder until I can do it as well as before.</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
<tr>
<td>3</td>
<td>The opportunity to do challenging work is important to me.</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
<tr>
<td>4</td>
<td>When I fail to complete a difficult task, I plan to try harder the next time I work on it.</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
<tr>
<td>5</td>
<td>I prefer to work on tasks that force me to learn new things.</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
<tr>
<td>6</td>
<td>The opportunity to learn new things is important to me.</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
<tr>
<td>7</td>
<td>I do my best when I’m working on a fairly difficult task.</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
<tr>
<td>8</td>
<td>I try hard to improve on my past performance.</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
<tr>
<td>9</td>
<td>The opportunity to extend the range of my abilities is important to me.</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
<tr>
<td>10</td>
<td>When I have difficulty solving a problem, I enjoy trying different approaches to see which one will work.</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
</tbody>
</table>
Appendix E.4. Proactive personality items

Directions: In each of the following, please indicate the degree to which you agree, or disagree, with the statement.

<table>
<thead>
<tr>
<th>Item #</th>
<th>Item</th>
<th>Does not apply at all</th>
<th>Applies completely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I am constantly on the lookout for new ways to improve my life.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Wherever I have been, I have been a powerful force for constructive change.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Nothing is more exciting for me than seeing my ideas turn into reality.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>If I see something I don’t like, I fix it.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>No matter what the odds, if I believe on something I will make it happen.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>I love being a champion for my ideas, even against others’ opposition.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>I excel at identifying opportunities.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>I always look for better ways to do things.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>If I believe in an idea, no obstacle will prevent me from making it happen.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>I can spot a good opportunity long before others can.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>
Appendix E.5. Career optimism items

Directions: In each of the following, please indicate the degree to which you agree, or disagree, with the statement.

<table>
<thead>
<tr>
<th>Item #</th>
<th>Item</th>
<th>Does not apply at all</th>
<th>Applies completely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I get excited when I think about running my own business venture.</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
<tr>
<td>2</td>
<td>Thinking about my future business venture inspires me.</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
<tr>
<td>*3</td>
<td>Thinking about my future business venture frustrates me.</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
<tr>
<td>*4</td>
<td>It is difficult to relate my abilities to a specific business venture.</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
<tr>
<td>5</td>
<td>I understand my business-related interests.</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
<tr>
<td>6</td>
<td>I am eager to pursue my business dreams.</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
<tr>
<td>*7</td>
<td>I am unsure of my future business success.</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
<tr>
<td>*8</td>
<td>It is hard to discover the right business opportunity.</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
<tr>
<td>9</td>
<td>Planning my future business venture is a natural activity.</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
<tr>
<td>10</td>
<td>I will definitely make the right decisions in my future business venture.</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
</tbody>
</table>

*Reverse-coded items
Appendix F

Materials for Empirical Paper 2

Appendix F.1 Demographic questions
Appendix F.2 Career Adapt-Abilities items
Appendix F.3 Entrepreneurial self-efficacy items
Appendix F.4 Entrepreneurial intentions
Appendix F.1. Demographic questions

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>01. What is your gender (please encircle)?</td>
<td>1 Male 2 Female</td>
</tr>
<tr>
<td>02. What is your age (as of your last birthday)?</td>
<td>_____ years old</td>
</tr>
<tr>
<td>03. What is your current year level in the university (please encircle)?</td>
<td>1 Freshmen 2 Sophomore 3 Junior 4 Senior and above</td>
</tr>
<tr>
<td>04. Does your father or mother run their own business?</td>
<td>1 Yes 2 No</td>
</tr>
</tbody>
</table>
Appendix F.2. Career Adapt-Abilities items

Directions: Different people use different strengths to build their careers. No one is good at everything. Each of us emphasizes some strengths more than others. Please rate how strongly you have developed each of the following abilities.

<table>
<thead>
<tr>
<th>Item #</th>
<th>Not Strong</th>
<th>Strongest</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>
## Appendix F.3. Entrepreneurial self-efficacy items

Directions: In each of the following, please rate your personal capabilities against your peers in regards to the following characteristics below.

<table>
<thead>
<tr>
<th>Item #</th>
<th>Item Description</th>
<th>Much Worse</th>
<th>Much Better</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Being able to solve problems.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Managing money.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Being creative.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Getting people to agree with you.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Being a leader.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Making decisions.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>
Appendix F.4. Entrepreneurial intentions

Directions: In each of the following, please indicate the degree to which you agree, or disagree, with the statement.

<table>
<thead>
<tr>
<th>Item #</th>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I have always wanted to work for myself (i.e., self-employed).</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>If I have the opportunity, I would start my own business venture.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>
Appendix G

Measures for Empirical Paper 3

Appendix G.1. Demographic questions
   Appendix G.1.1. Sample 1 (Students)
   Appendix G.1.2. Sample 2 (Employee)
Appendix G.2. Career Adapt-Abilities items
Appendix G.3. Tenacious goal pursuit items
Appendix G.4. Flexible goal adjustment items
Appendix G.5. Career satisfaction items
Appendix G.6. Promotability items
Appendix G.1.1. Demographic questions (Sample 1: Students)

01. What is your gender (please encircle)? 1 Male 2 Female

02. What is your age (as of your last birthday)? _____ years old

03. What is your current year level in the university (please encircle)?
   1 Freshmen 2 Sophomore 3 Junior 4 Senior and above

04. What is your field of study (please encircle)?
   1 Design and Arts 2 Hotel, Restaurant, and Institution Management
   3 Multidisciplinary Studies 4 Deaf Education
   5 Management and Information Technology

05. Are you planning to change your current field of study in the next trimester?
   1 Yes 2 No 3 Undecided
### Appendix G.1.2. Demographic questions (Sample 2: Employees)

<table>
<thead>
<tr>
<th></th>
<th>Question</th>
<th>Options/Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>01.</td>
<td>What is your gender (please encircle)?</td>
<td>1 Male</td>
</tr>
<tr>
<td>02.</td>
<td>What is your age (as of your last birthday)?</td>
<td>______years old</td>
</tr>
<tr>
<td>03.</td>
<td>What is your marital status (please encircle)?</td>
<td>1 Single</td>
</tr>
<tr>
<td>04.</td>
<td>Number of children:</td>
<td>______</td>
</tr>
<tr>
<td>05.</td>
<td>Number of financially dependent children:</td>
<td>______</td>
</tr>
<tr>
<td>06.</td>
<td>What is the highest educational degree you have earned (please encircle)?</td>
<td>1 High school diploma</td>
</tr>
<tr>
<td>07.</td>
<td>How long have you been working with your current organization?</td>
<td>______ year/s</td>
</tr>
<tr>
<td>08.</td>
<td>What industry do you work for? Please tick the box that applies.</td>
<td>□ Banking / Finance</td>
</tr>
<tr>
<td>09.</td>
<td>Are you planning to change your current occupation in the next year?</td>
<td>1 Yes</td>
</tr>
</tbody>
</table>
Appendix G.2. Career Adapt-Abilities (CAAS) items

Directions: Different people use different strengths to build their careers. No one is good at everything. Each of us emphasizes some strengths more than others. Please rate how strongly you have developed each of the following abilities.

<table>
<thead>
<tr>
<th>Item #</th>
<th>Description</th>
<th>Not Strong</th>
<th>Strongest</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Thinking about what my future will be like.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Realizing that today’s choices shape my future.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Preparing for the future.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Becoming aware of the educational and career choices that I must make.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Planning how to achieve my goals.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Concerned about my career.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Keeping upbeat.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Making decisions by myself.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Taking responsibility for my actions.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Sticking up for my beliefs.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Counting on myself.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Doing what’s right for me.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Exploring my surroundings.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Looking for opportunities to grow as a person.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Investigating options before making a choice.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Observing different ways of doing things.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Probing deeply into questions I have.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Becoming curious about new opportunities.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Performing tasks efficiently.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Taking care to do things well.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Learning new skills.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Working up to my ability.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Overcoming obstacles.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Solving problems.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>
Appendix G.3. Tenacious goal pursuit items

Directions: In each of the following, please indicate the degree to which you agree, or disagree, with the statement.

<table>
<thead>
<tr>
<th>Item #</th>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>*1</td>
<td>Life is much more pleasurable when I do not expect too much from it.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>*2</td>
<td>To avoid disappointment, I don’t set my goals too high.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>*3</td>
<td>I tend to lose interest in matters where I cannot keep up with others.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>*4</td>
<td>I find it easy to give up a wish if it seems very difficult to fulfil.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>*5</td>
<td>When I run up against overwhelming obstacles, I prefer to look for a new goal.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>*6</td>
<td>When I have tried hard but cannot solve a problem, I find it easy just to leave it unsolved.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>*7</td>
<td>I avoid struggling with problems for which I have no solutions.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>*8</td>
<td>If I find I cannot reach a goal, I prefer to change my goal rather than to keep trying.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>*9</td>
<td>Faced with a serious problem, I sometimes pay no attention to it.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>The harder a goal is to achieve, the more appeal it has to me.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>I can be very stubborn in pursuing my goals.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>When faced with obstacles, I usually increase my efforts.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Even when things seem hopeless, I keep on fighting to reach my goals.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Even when a situation seems hopeless, I still try to master it.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>I stick to my goals and projects even in face of great difficulties.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>

*Reverse-coded items*
Appendix G.4. Flexible goal adjustment items

Directions: In each of the following, please indicate the degree to which you agree, or disagree, with the statement.

<table>
<thead>
<tr>
<th>Item #</th>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>*1</td>
<td>When I get stuck on something, it's hard for me to find a new approach.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>*2</td>
<td>It is difficult for me to accept a setback or defeat.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>*3</td>
<td>I am never really satisfied unless things come up to my wishes completely.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>*4</td>
<td>I create problems for myself because of my high demands.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>When everything seems to be going wrong, I can usually find a positive side.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>I usually find something positive even in giving up something I cherish.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>I find that even life’s troubles have a bright side.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>When I get into serious trouble, I immediately look at how to make the best out of the situation.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>I find it easy to see something positive even in a serious mishap.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>I adapt quite easily to changes in plans or circumstances.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Faced with a disappointment, I remind myself that other things in life are just as important.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>If I don’t readily get something I want, I pursue it with patience.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>I usually have no difficulty in recognizing my limits.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>In general, I am not upset very long about an opportunity passed up.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>After a serious setback, I soon turn to new tasks.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>

*Reverse-coded items
Appendix G.5. Career satisfaction items

Directions: The following questions ask you about your job-related attitudes and behaviors. Please indicate the degree to which the descriptions apply to you.

<table>
<thead>
<tr>
<th>Item #</th>
<th>Item</th>
<th>Does not apply at all</th>
<th>Applies completely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I am satisfied with the success I have achieved in my career.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I am satisfied with the progress I have made toward meeting my overall career goals.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I am satisfied with the progress I have made toward meeting my goals for income.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>I am satisfied with the progress I have made toward meeting my goals for advancement.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I am satisfied with the progress I have made toward meeting my goals for the development of new skills.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>
Appendix G.6. Promotability items

Directions: The following questions ask you about your job-related attitudes and behaviors. Please indicate the degree to which the descriptions apply to you.

<table>
<thead>
<tr>
<th>Item #</th>
<th>Description</th>
<th>Does not apply at all</th>
<th>Applies completely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I am likely to have a successful career.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I possess a high potential to assume more work responsibilities.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>If my supervisor had to select a successor for my position, s/he would select me.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>

4. What is the likelihood that your supervisor will promote you to a higher position sometime during your career within your organization? Please encircle the number which best describes your opinion.

   No Likelihood 1 2 3 4 5 6 7 High Likelihood