UNIVERSITY STUDENTS' DISPOSITIONAL EMPLOYABILITY AND CAREER ADAPTIVE BEHAVIOUR

A Thesis submitted by

Jason L. Brown

BSc(Psych), GradCertCarEd&Dev, GradDipVET

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ABSTRACT

For many years there have been calls from industry and governments to improve the employability of graduates, with claims of a gap between the skills graduates possess and the skills required by industry. *Graduate employability* is the term used in higher education to refer to the knowledge, skills and attributes a graduate requires to obtain and maintain employment. Employability interventions in higher education reflect the broad definition of employability and thus focus on strategies that emphasise development of human capital, such as graduate attributes, work integrated learning, and co-curricular employability programs. Research in higher education over the past 30 years has focused on the competence-based or human capital approach to employability. More recently, additional forms of capital including social, psychological, cultural, and identity capital (Tomlinson, 2017a) have been encompassed into the concept of employability. However, some scholars have criticised the capital approach for ignoring the role of career management skills and job seeking processes (Bridgstock, 2009; Holmes, 2013). Dispositional employability has emerged as an alternative approach to understanding employability as a psychosocial process that supports individuals to proactively respond to opportunities and challenges in the labour market (Fugate et al., 2004). Informed by dispositional employability and career construction theory (Savickas, 2005, 2013), the purpose of this doctoral research is to explore the psychosocial factors of employability that support university students' engagement in career adaptive behaviours that are likely to lead to the achievement of employment outcomes. A portfolio of three independent but related studies explored university students' dispositional employability and career adaptive behaviours. Study 1 tested the predominant assumptions in higher education of a connection between generic skills and employment outcomes. Responses (N = 110,685) collected by the Australian government through three annual national surveys of university graduates (2015 – 2017) were analysed. Graduates' perceptions

of their skills and qualities were found to be significantly correlated with employment outcomes, however the low correlation and near zero effect size indicated that this finding was mainly due to the large sample size. Study 2 was conducted across two phases. Using principal axis factoring, the first phase (N = 751) replicated the dispositional measure of employability (Fugate & Kinicki, 2008) for the first time with a sample of university students, and identified a three factor structure for the job search self-efficacy scale (Saks et al., 2015) which differentiates between passive and proactive job search behaviours and outcomes. The second phase (N = 786) found support for hypothesised relations between dispositional employability, career adaptability, job search self-efficacy, and career identity. Study 3 examined the decisions that university students made in choosing career adaptive behaviours for developing their employability. Using a qualitative research design, content analysis of focus group transcripts was conducted. The study found evidence that students' decisions to engage in career adaptive behaviours were influenced by dimensions of career adaptability (concern, control, curiosity, and confidence). Moreover, students' career adaptive behaviours appeared to principally support the development of human and social capital aspects of employability. There are three significant contributions of the research. The first is in connecting the higher education graduate employability and career development literatures. The three studies in this thesis incorporate evidence from studies across both literatures. The second contribution is the application of career construction theory to graduate employability research, which provides an avenue for future research to better understand how employability is developed during university studies, and to test the effectiveness of curricula and extra-curricular programs on important career outcomes, such as career decisiveness, job search self-efficacy, and career identity. The third contribution is the validation of a measure of dispositional employability for use in higher education settings.

Keywords:

Employability, employment, graduates, students, university, higher education, dispositions, career adaptability, job search self-efficacy, career identity, career adaptive behaviour, vocational psychology, career development

CERTIFICATION OF THESIS

This Thesis is the work of Jason Leslie Brown except where otherwise acknowledged, with the majority of the authorship of the papers presented as a Thesis by Publication undertaken by the Student. The work is original and has not previously been submitted for any other award, except where acknowledged.

Student:

Jason L. Brown Date

Principal Supervisor:

Peter McIlveen Date

Associate Supervisor:

Sara Hammer Date

Student and supervisors signatures of endorsement are held at the University.

STATEMENT OF CONTRIBUTION

Jason Brown undertook the majority of the research and authorship of the papers included in this Thesis by Publication.

Paper 1

Brown, J.L., Hammer, S.J., Perera, H.N., & McIlveen, P. (2021). Relations between graduates' learning experiences and employment outcomes: A cautionary note for institutional performance indicators. *International Journal for Educational and Vocational Guidance*. https://doi.org/10.1007/s10775-021-09477-0.

Jason Brown contributed 70% to this paper. Collectively Hammer, Perera, and McIlveen contributed the remainder.

Paper 2

Brown, J.L., McIlveen, P., Hammer, S.J., & Perera, H.N. (2021). Relations between dispositional employability, career adaptability, job search self-efficacy, and career identity of university students. *Manuscript under review*.

Jason Brown contributed 70% to this paper. Collectively McIlveen, Hammer, and Perera contributed the remainder.

Paper 3

Brown, J.L., Dollinger, M., Hammer, S.J., & McIlveen, P. (2021). Career adaptability and career adaptive behaviours: A qualitative analysis of university students' participation in extra-curricular activities. *Manuscript under review*.

Jason Brown contributed 70% to this paper. Collectively Dollinger, Hammer, and McIlveen contributed the remainder.

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While the purpose of a PhD is to become an independent scholar, excellent research is achieved through scholarly collaborations. To my research collaborators, Michael Healy, Dr Harsha Perera, Dr Mollie Dollinger, Dr Louise Lexis, Dr Brianna Julien, and Dr Candy Ho, you have all inspired me to strive for excellence, introduced me to new knowledge, and welcomed me as a peer.

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encouraging my academic development, and supporting my transition from a practitioner to a researcher and teacher.

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LIST OF PUBLICATIONS

During my candidate in the Doctor of Philosophy program between 2016 and 2021, I have undertaken research which has resulted in nine publications. I was the lead author for five publications (three of which form the basis of this thesis) and I was a contributing author on the other four publications. The following publications demonstrate my research interests broadly within the field of vocational psychology, and specifically around the psychosocial factors that contribute to employability, applied research relating to careers and employability learning, and the work of careers services and career development practitioners.

Publications Prepared for this Thesis-By-Publication

Brown, J.L., Hammer, S.J., Perera, H.N., & McIlveen, P. (2021). Relations between graduates' learning experiences and employment outcomes: A cautionary note for institutional performance indicators. *International Journal for Educational and Vocational Guidance*. https://doi.org/10.1007/s10775-021-09477-0.

Brown, J.L., McIlveen, P., Hammer, S.J., & Perera, H.N. (2021). Relations between dispositional employability, career adaptability, job search self-efficacy, and career identity of university students. *Manuscript under review*.

Brown, J.L., Dollinger, M., Hammer, S.J., & McIlveen, P. (2021). Career adaptability and career adaptive behaviours: A qualitative analysis of university students' participation in extra-curricular activities. *Australian Journal of Career Development, 30*(3), 189 - 198. https://doi.org/10.1177/10384162211067014

Other Publications Completed During the Period of Candidature

Brown, J. L., Healy, M., Lexis, L., & Julien, B. L. (2019). Connectedness learning in the life sciences: LinkedIn as an assessment task for employability and career exploration. In R. Bridgstock & N. Tippett (Eds.), *Higher education and the future of graduate*

employability: A connectedness learning approach (pp. 100-119). Edward Elgar. https://doi.org/10.4337/9781788972611

Brown, J. L., Healy, M., McCredie, T., & McIlveen, P. (2019). Career services in Australian higher education: Aligning the training of practitioners to contemporary practice. *Journal of Higher Education Policy and Management, 41*(5), 511-533. https://doi.org/10.1080/1360080x.2019.1646380

Dollinger, M., & **Brown, J. L**. (2019). An institutional framework to guide the comparison of work integrated learning types. *Journal of Teaching and Learning for Graduate Employability, 10*(1), 88-100. https://doi.org/10.21153/jtlge2019vol10no1art780

Dollinger, M., **Brown, J. L.,** & D'Angelo, B. (accepted). Co-creating end-to-end student experiences in career development learning. In S. O'Shea, O. Groves, K. Austin, & J. Lamanna (Eds.), *Considering career development sustainability: Implications for research and practice*. Springer.

Healy, M., **Brown J.L.,** & Ho, C. (2021). Graduate employability as a professional proto-jurisdiction in higher education. *Higher Education*. https://doi.org/10.1007/s10734-021-00733-4

McIlveen, P., Perera, H. N., **Brown, J. L**., Healy, M., & Hammer, S. (2021). Career assessment. In P. J. Robertson, T. Hooley, & P. McCash (Eds.), *The oxford handbook of career development*. Oxford University Press. https://doi.org/10.1093/oxfordhb/9780190069704.013.23

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CHAPTER 1: INTRODUCTION

Over the past few decades, there has been debate about the effectiveness of universities to produce graduates with the skills required in the labour market (Tomlinson, 2017b). *Employability* refers to the ability of individuals to obtain and maintain employment and self-navigate the labour market. Definitions of employability refer to possession of skills, knowledge, attitudes, and other attributes (Dacre Pool & Sewell, 2007; De Vos et al., 2011; Hillage & Pollard, 1998; Yorke & Knight, 2004). Although the definitions of employability refer to obtaining and maintaining employment, the focus of research into employability of university graduates is implicitly and explicitly concerned with the transition from university to employment. Several influences on how employability is conceptualised and the subsequent strategies that address these concerns are evident, such as the concerns about employability raised by industry, the focus on employability as a set of transferable skills, agencies that publish ranked lists of university employability performance, and disconnection between two important literatures relevant to graduate employability within higher education.

In the Australian context, business and industry groups have successfully argued that universities need to do more to teach and assess *employability skills*, resulting in the publication of reports and frameworks that argue the importance of employability skills for improving work performance and productivity, such as the industry led *Graduate Employability Skills* report (Commonwealth of Australia, 2007) and the *Core Skills for Work Developmental Framework* (Australian Government, 2013). The employability skills identified in these reports include communication, teamwork, problem solving, initiative and enterprise, planning and organising, self-management, and learning (Commonwealth of Australia, 2007, p. 25). Globally, scholars have attempted to identify the employability skills that are important to employers and their perception of the level of skill that graduates possess. The common finding from such studies is that there is a gap between the skills of

graduates and what is required in the labour market (Abbasi et al., 2018; Matsouka & Mihail, 2016; McMurray et al., 2016; Messum et al., 2017).

Based on calls from industry and governments to improve the employability of graduates, universities have implemented the teaching and assessing of institution-wide *graduate attributes* or generic skills and qualities (Barrie, 2006, 2007; Oliver, 2013). Wald and Harland (2019) argue that graduate attributes were developed—without theoretical foundation—to respond to government and employer calls for improved links between universities and the labour market. Despite the proliferation of graduate attributes in Australian higher education, Hammer et al. (2021) found that much of the research into graduate attributes is focused on discipline-specific implementation processes, and Mason et al. (2009) argue that there is a lack of evidence of positive relations between the teaching and assessing of graduate attributes and employment outcomes.

Continued focus on the employability of university graduates is maintained through the annual public reporting of employment outcomes of universities (e.g., HESA, 2016; QILT, 2020) and global employability rankings (e.g., Quacquarelli Symonds Limited, 2017; Times Higher Education, 2017). Recent Australian Government policies are designed to incentivise institutions to continue to improve performance on indicators of employability via introduction of performance-based funding (Commonwealth of Australia, 2019), and to influence the enrolment decisions of students through changes to course fees and levels of funding as outlined in the Job Ready Graduates Package (Australian Government, 2020). The measures of employability include short-term employment outcomes of university graduates perceptions of their development of graduate skills and qualities (Graduate Careers Australia, 2013; QILT, 2020), and employers' satisfaction of graduates' skills and qualities (QILT, 2017). These measures highlight the imprecise conceptualisation of employability in higher

education and the resultant conflation of employment outcomes and perceptions of skill development as indicators of employability.

The employability literature is vast and covers a range of topics related to defining the conceptual landscape of graduate employability; individual factors, such as professional identities, perceived employability, career exploration, career decision-making, and career self-management; and institutional-focused processes, including graduate attributes and workplace learning (Healy et al., 2020). Despite the plethora of employability literature, the focus on the development of human capital via teaching and assessing graduate attributes remains dominant in higher education (de St Jorre & Oliver, 2018; Hammer et al., 2021; Holmes, 2013). Other employability conceptualisations, such as graduate employability capital (Tomlinson, 2017a), perceived employability (Rothwell et al., 2008; Rothwell et al., 2009), and dispositional employability (Fugate & Kinicki, 2008; Fugate et al., 2004) have the potential to inform the design of interventions to support students' development of employability and to measure the effectiveness of those interventions.

1.1 Research Problem

Employability interventions in higher education tend to focus on supporting students' development of employability via curricula and co-curricular programs that emphasise human capital dimensions such as knowledge, skills, and experiences. Employability scholars have explored many dimensions of employability that include human, social, psychological, cultural and identity capitals, and the importance of career self-management to negotiate the transition from study to work (Bridgstock, 2009; Clarke, 2017; Tomlinson, 2017a). Other lines of research addresses the contribution of dispositional traits to employability (Fugate & Kinicki, 2008; Fugate et al., 2004), and self-perceptions of employability (Rothwell et al., 2008; Rothwell et al., 2009). Despite the evidence of valid and reliable measurement of *dispositional employability* (Fugate & Kinicki, 2008), the higher education sector is yet to

utilise and benefit from this research. However, the contribution of dispositional traits to employability, is yet to be discerned conceptually and empirically. This Thesis addresses the conceptualisation, measurement, and applicability of dispositional employability in a career construction framework applied to higher education. Career construction theory (Savickas, 2005, 2013) informs the overall Thesis as the theory incorporates factors relevant to employability, namely the development of interests, skills, and abilities, and how individuals navigate the world of work through adaptation to vocational tasks, transitions, and traumas.

1.2 Research Objectives

The objective of this research is to develop a deeper understanding of the psychosocial factors that contribute to university students' employability and the enactment of career adaptive behaviours likely to support achievement of career-related outcomes. In addition, this research aims to locate dispositional employability within the career adaptation model of career construction theory (CCT; Savickas, 2005; Savickas, 2013; Savickas & Porfeli, 2012). This will be an important contribution to knowledge, as the dominant focus of university strategies is to develop student employability via the teaching of graduate attributes (Bennett et al., 2017; Oliver & Jorre de St Jorre, 2018). However, as will be discussed in this Thesis, there is growing evidence in the literature that the relation between possession of skills and employment outcomes is weak, and that other conceptualisations of employability might better predict employment outcomes.

1.3 Personal Statement

The culmination of personal and work circumstances and an interest in research presented me with an opportunity in 2016 to undertake my research training via enrolment in a Doctor of Philosophy program. With close to 20 years' experience as a career development practitioner and manager, I was seeking to deepen my knowledge of the evidence informing

my practice. In addition, being in my early 40s, I recognised that I needed to commit to setting up my career to sustain me intellectually and financially for another 20 years.

In applying for a PhD program, I started reading some of the employability literature to identify a broad topic to research. I had selected this topic as my university decided to develop a strategic project to improve graduate employability, and that as head of the careers service, I was invited to be part of the project team to design and implement this project. What I read in the higher education literature about employability did not align with my experience as a career development practitioner. The literature seemed concerned mostly with employability skills and addressing concerns from employers that university graduates did not have the skills required in industry. Universities' responses to industry demands for improvement in graduate employability, reported in the literature, was to embed graduate attributes in the curriculum. As an aside, eight years prior to commencing my PhD, I was working as a project officer in a university teaching and learning centre. I was asked to provide some project support to the university's project to identify graduate attributes to embed in the curriculum. What I observed in this project was a political process of negotiation to select graduate attributes that were palatable across the spectrum of academic tribes. This was not an evidence-based design of a strategic curriculum intervention. The experience I had in that job, which was a temporary detour from my career development practice, proved to be a motivating point as I prepared to start my PhD research.

In preparing my application to enrol in the PhD, I considered some of the ideas in the higher education graduate employability literature about employability skills gaps, my familiarity with the career development/vocational psychology literature, and my professional practice. The higher education graduate employability literature was focused on describing and defining employability, usually through the lens of the need to increase graduates' skills to improve employment outcomes. In contrast, the career development/vocational psychology

literature had theories and empirical evidence of the effectiveness of interventions that can support clients to obtain employment. Similarly, in my own practice, when faced with a client who was experiencing difficulties obtaining employment, in most situations the solution was not to recommend they close their skill gaps. Rather, support directed towards job search behaviours often resulted in the client obtaining employment relatively quickly. Together, these three reference points presented me with an opportunity to design a research project that would aim to integrate the knowledge from two distinct literatures to design evidence-based interventions to increase the chance of graduates obtaining employment.

As a researcher, my undergraduate training in psychology has had a strong influence on my approach, which predominantly reflects a positivist research worldview. Ponterotto (2005) argues that psychology training has over-emphasised the positivist research worldview and thus limits the advancement of the field. Although I have a strong orientation to quantitative research designs, through my PhD research I am developing my knowledge and skills to include qualitative research. As side projects to the PhD, I have published a book chapter and two journal articles using qualitative methods (Brown, Healy, Lexis, et al., 2019; Brown, Healy, McCredie, et al., 2019; Healy et al., 2021). This Thesis continues this approach of an emphasis on quantitative methods and a growing interest in qualitative research.

1.4 Overview of the Thesis

As an experienced career development professional, my approach to undertaking postgraduate research was to deepen my knowledge and develop my research skills to set up my transition from a practitioner to a researcher. Hence, the Thesis presents a portfolio of three related but independent publications. The Thesis includes two quantitative studies and one qualitative study. Each of the studies has been prepared for publication and are presented in the form of a Thesis by Publication.

The Thesis is organised into six chapters. Chapter 1 provides an overview of the present investigation, description of the research objectives and questions. Chapter 2 presents a review of the literature. Chapters 3 through 5 present the published studies, starting with a brief introduction to the study and inclusion of the full text from the author accepted manuscripts. Chapter 6 presents a general discussion of the key findings and the unique contribution to the literature offered by these studies. Next, I present a short summary of the three studies.

Study 1, presented in Chapter 3, was designed to test the assumptions predominant in higher education of a connection between generic skills and employment outcomes. Data collected by the Australian Government through an annual national survey of university graduates was analysed. Graduates' perceptions of their skills and qualities were found to be positively correlated with employment outcomes, however the low correlation and near zero effect size indicated that this finding was mainly due to the large sample size.

Study 2, presented in Chapter 4, was designed to validate a measure of dispositional employability for use with university students, and to test hypothesised relations between dispositional employability and components of career construction theory's model of career adaptation. Data was collected at a large multi-campus university in Australia. Structural equation modelling was used to test measurement models of the scales and hierarchical regression analyses were used to test hypothesised relations between dispositional employability and other career constructs.

Study 3, presented in Chapter 5, was designed to develop a deeper understanding of decisions that university students make in relation to choosing career adaptive behaviours for developing their employability. Using a qualitative research design, transcripts of focus group discussions were analysed using template analysis. The study found evidence that students' decisions to engage in career adaptive behaviours are influenced by dimensions of career

adaptability (concern, control, curiosity, and confidence). Moreover, students' career adaptive behaviours appear to support development of human and social capital.

Within the current context of the COVID-19 pandemic, it is important to note that the data collected for two studies was completed prior to the pandemic, and one study conducted during the first year of the pandemic. Study 1 accessed the national Graduate Outcome Survey data from 2015 to 2017. Study 2 involved collection of data from students across the 2020 academic year. Study 3 was a qualitative data collection via analysis of focus group transcripts. The seven focus group sessions were conducted in November and December 2019.

1.5 Significance, Overall Aim and Anticipated Contributions of the Research

The purpose of this doctoral research is to explore the psychosocial factors of employability that support university students' engagement in career adaptive behaviours. The findings of this research will inform the design of curricula and extra-curricular programs and initiatives to enhance graduate employability.

There are three significant anticipated contributions of the research. The first is in connecting the higher education graduate employability and career development literatures. The application of career construction theory (Savickas, 2005, 2013) will introduce to higher education researchers a theory that can inform further research. As Healy et al. (2020) found, there are very few studies in the graduate employability and career development literature networks that directly cite one another. The three studies in this Thesis incorporate evidence from studies across both literatures. The second anticipated contribution is the application of career construction theory to graduate employability research, which provides an avenue for future research to better understand how employability is developed during university studies, and the effectiveness of curricula and extra-curricular programs on important career outcomes, such as career decisiveness, job search self-efficacy, and career identity. The third

anticipated contribution is the validation of a measure of dispositional employability for use in higher education settings.

CHAPTER 2: LITERATURE REVIEW

2.1 The Employability Literature

A large body of research into employability has been conducted over the past three decades and the research is situated across two distinct bodies of literature—higher education and vocational psychology/career development. Healy et al. (2020) conducted a direct citation network analysis of 4068 articles examining employability. Two distinct clusters of articles were identified, representing a graduate employability network and a career development network. Despite the large bodies of literature, there were only a small number of direct citations between the two clusters of research. Healy and colleagues observed that the higher education literature is conducted by researchers from a diverse range of discipline backgrounds, utilising diverse theoretical and methodological approaches. This literature is well embedded in higher education practice, particularly through experiential approaches. The higher education/graduate employability literature examines conceptual aspects of graduate employability, individual factors, and institutional-focused processes (Healy et al., 2020). Major areas of focus include graduate attributes (Barrie, 2004, 2006; Oliver, 2013; Oliver & Jorre de St Jorre, 2018); employability capital (Clarke, 2018; Tomlinson, 2017a; Williams et al., 2016); the effectiveness of institutional strategies (Bennett et al., 2017; Bridgstock & Jackson, 2019); and pedagogical approaches, including work integrated learning, extra-curricular activities, and employability awards (Jackson & Bridgstock, 2021; Russell & Kay, 2019; Watson, 2011). By contrast, the career development literature focuses on theoretical and empirical research and tends to be predominantly conducted within two sub-disciplines of applied psychology—vocational psychology and industrial/organisational psychology. This specific body of literature focuses on the measurement of individual psychosocial factors, such as career exploration, career decision-making, and career self-management (Healy et al., 2020). Major theories relevant to employability include career

construction theory (Savickas, 2005, 2013), social cognitive career theory (Lent, 2005, 2013), and frameworks that focus on career behaviour (Rottinghaus & Miller, 2013). These theories and frameworks are discussed in detail in section 2.5 of this Thesis. Healy et al. (2020) note that there has been criticism that the career development literature is somewhat disconnected from career development practice.

Research into employability needs to connect important findings from both the graduate employability and career development literatures which could better inform how universities support the development of graduates' employability through curricula initiatives and co-curricular programs and support services.

2.2 Employability in Higher Education

In higher education, several influential conceptual frameworks have been developed that provide academic staff and career development practitioners with models to which curricula and career development interventions can be designed to enhance the employability of students. Knight and Yorke (2004) developed the USEM model: *understanding* or mastery of subject matter; *skilful practice* incorporating procedural knowledge, generic and technical skills; *efficacy beliefs* are those that an individual believes they can achieve or impact; and *metacognition*, which is defined as an "awareness of what one knows and can do, and of how one learns more" (p. 38). Knight and Yorke argue that the employability literature is focused predominantly on knowledge and skills, at the expense of the contribution to employability of efficacy beliefs and metacognition. Dacre Pool and Sewell (2007) developed the CareerEDGE model, which contains five components: career development learning, work and life experience, degree knowledge, generic skills, and emotional intelligence. More recently, Römgens et al. (2019) proposed six integrated dimensions of employability: applying discipline knowledge, transferable generic skills, emotional regulation, career development skills, self-management, and self-efficacy.

The three models reflect common definitions of employability capital. Although many scholars argue that the definition of employability is contested, the many varied definitions differ in semantics rather than any ideological or theoretical positioning. Table 1 lists some of the common definitions of employability in the literature. Most of the definitions refer to employability as the possession of knowledge, skills and other attributes that enable individuals to gain and maintain employment. Previously, scholars referred to this as competence-based employability (e.g., De Vos et al., 2011; Heijde & Van Der Heijden, 2006); however, with recent expansion of the concept to include multiple forms of capital (e.g., Tomlinson, 2017a; Williams et al., 2016), the earlier employability definitions can be recast as representing human capital. Self-perceived employability (Rothwell et al., 2008; Rothwell et al., 2009) represents how individual's perceive their ability to obtain employment, or the perceptions of the possibilities of obtaining employment (Vanhercke et al., 2014). Self-perceived employability is an outcome of the development of skills, knowledge, and the individual's perceptions of the demand for those skills in the labour market. Fugate and colleagues (Fugate & Kinicki, 2008; Fugate et al., 2004) view employability as a psychosocial process that supports individuals to proactively seek out opportunities in the labour market.

Although these conceptual frameworks have face validity, the lack of an overarching theoretical basis of the frameworks within the higher education/graduate employability literature, and the paucity of research that empirically tests the relations between the employability antecedents and employment outcomes, remains problematic. The vocational psychology/career development literature has well defined and tested theories that might be useful in furthering the higher education research into graduate employability. Social cognitive career theory (Lent, 2013; Lent et al., 1994) and career construction theory

(Savickas, 2005, 2013) are theories that incorporate personal attributes, behaviours, and external influences that have been demonstrated to be related to career outcomes.

Table 1

Definitions of Employability

Authors and Date	Definition
Employability capital	
Dacre Pool and Sewell (2007)	"Employability is having a set of skills, knowledge, understanding and personal attributes that make a person more likely to choose and secure occupations in which they can be satisfied and successful." (p. 280)
De Vos et al. (2011)	"The continuous fulfilling, acquiring or creating of work through the optimal use of competences. These competences refer to an individual's knowledge, skills, and abilities needed to adequately perform various tasks and carry responsibilities within a job, and to their adaptability to changes in the internal and external labor market." (p. 439)
Hillage and Pollard (1998)	"Employability is about being capable of getting and keeping fulfilling work … to move self-sufficiently within the labour market to realise potential through sustainable employment. For the individual, employability depends on the knowledge, skills and attitudes they possess, the way they use those assets and present them to employers and the context … within which they seek work." (p. 2)
Tomlinson (2017a)	"Graduate employability as largely constitutive of the accumulation and deployment of a variety of interactive forms of capital … that confer benefits and advantages onto graduates. These resources encompass a range of educational, social, cultural and psycho-social dimensions and are acquired through graduates' formal and informal experiences." (p. 339)
Yorke and Knight (2004)	"A set of achievements – skills, understandings and personal attributes – that make graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community and the economy." (p. 3)
Self-perceived employability	
Rothwell et al. (2008)	"The perceived ability to attain sustainable employment appropriate to one's qualification level." (p. 2)
Vanhercke et al. (2014)	"The individual's perception of his or her possibilities of obtaining and maintaining employment." (p. 594)
Dispositional employability	
Fugate et al. (2004)	"Employability is a psycho-social construct that embodies individual characteristics that foster adaptive cognition, behavior, and affect, and enhance the individual-work interface" (p. 15)

2.3 Three Approaches to Employability

Within the broad conceptualisation of employability, there are three streams of scholarly approaches which will be explored in this chapter. The first, *employability capital*, is based on the early research into employability from the 1990s to 2000's which emphasised the importance of human capital. In the past decade, further scholarly work has expanded the composition of employability to include social, identity, psychological, and cultural capital. The second, *self-perceived employability*, refers to "the perceived ability to attain sustainable employment appropriate to one's qualification level" (Rothwell et al., 2008, p. 2). The third, *dispositional employability* places an emphasis on psychosocial factors that support the enactment of proactive career behaviours directed towards obtainment of employment.

2.3.1 Employability Capital

Capital is concerned with "anything an individual possesses that can be seen as leading to an increased probability of positive economic outcomes, or other personal outcomes relating to the area of work" (Williams et al., 2016, p. 11). Five forms of capital—human, social, cultural, identity, and psychological (Caballero et al., 2020; Clarke, 2018; Donald et al., 2019; Fugate et al., 2004; Peeters et al., 2019; Tomlinson, 2017a)—are explored in the employability literature. Other scholars emphasise the importance of career self-management to support the achievement of employment (Bridgstock, 2009; Jackson & Bridgstock, 2021; Okay-Somerville & Scholarios, 2017). Caballero et al. (2020) found that psychological capital was more strongly related to perceived employability than was social and human capital.

Human Capital. Human capital refers to the knowledge and skills that graduates acquire through education and other developmental experiences (Fugate et al., 2004; Tomlinson, 2017a). Although the largest factors predicting employment outcomes include the field of study and individual factors (e.g., gender, disability, citizenship) (Jackson, 2014),

much of the research into human capital aspects of employability focuses on identifying employers' opinions on the most important generic skills and their satisfaction with the skill level of graduates (e.g., Abbas & Sagsan, 2019; Garner et al., 2019; Lowden et al., 2011; Rhew et al., 2019).

The methodology for identifying skills sought by employers include the use of surveys using pre-defined skills lists (Williams et al., 2019), and content analysis of job advertisements and attributes detailed in hiring processes (Suleman, 2016). Suleman argues that relational skills appear frequently because they are easily observable by an employer, whereas underlying skills, like analytical skills, are difficult to observe and thus appear less frequently. Williams et al. (2019) argue that the use of pre-defined lists of skills may narrowly focus responses from participants.

Some studies have surveyed employers, students, and academics, and found that each group places greater importance on different employability skills (Chowdhury & Miah, 2016; Lim, Lee, et al., 2016). Other scholars have also critiqued the lack of consideration of context in how skills are deployed in the workplace (Collet et al., 2015; Moore & Morton, 2017) and the subjectiveness of how skills are "considered in employer's assessment of employability" (Williams et al., 2019, p. 406).

In higher education, the teaching and assessing of graduate attributes, or generic skills and qualities, is explicitly connected with employability (Barrie, 2006; Hammer et al., 2021) and remains a dominant focus in higher education at institutional (Hammer et al., 2021; Oliver & Jorre de St Jorre, 2018) and policy levels (e.g., Higher Education Standards Framework; Commonwealth of Australia, 2015). Graduate attributes are defined as "the skills, knowledge and abilities of university graduates, beyond disciplinary content knowledge, which are applicable to a range of contexts" (Barrie, 2004, p. 262) and are understood as outcomes of teaching and learning processes. This definition is closely related

to common definitions of employability, which emphasise the importance of skills and attributes to obtaining and maintaining employment (e.g., Yorke, 2006).

Scholars have noted that the conceptualisation of graduate attributes was developed in response to employers' calls for addressing graduate employability, rather than from an empirical or theoretical basis (Barrie, 2006; Wald & Harland, 2019). Despite a proliferation of research into graduate attributes, most of the research literature is focused on discipline-specific implementation processes (Hammer et al., 2021). It is surprising, given the conceptual links between graduate attributes and employability, that there appears to be a lack of empirical investigations into the relations between graduate attributes and employment outcomes. This gap in the literature will be addressed in Chapter Three.

Social Capital. Social capital consists of the resources available through an individual's social network that enable identification of opportunities (Fugate, 2006; Tomlinson, 2017a). Membership of networks provide advantages to an individual's career through the ability to access firm- and career-specific information, source new learning, and leverage the reputation of a network to gain access to new contacts (Defillippi & Arthur, 1994). Siebert et al. (2001) propose that social capital consists of the structural properties of the network in terms of weak ties and structural holes, and embedded resources of contacts in other parts of the organisation and at higher organisational levels (Siebert et al., 2001). Siebert and colleagues tested relations between social capital and career outcomes and found that access to information, resources, and sponsorship mediates relations between social capital and career outcomes (salary, promotions, and career satisfaction). Specifically, weak ties were negatively related to access to information and sponsorship, whereas contacts in other organisational units was positively related to information, and contacts in higher levels was positively related to access to sponsorship.

A common piece of advice to job seekers is to access the "hidden" job market. Although university students often do not have extensive social networks directly in the field of study, Tomlinson (2017a) suggests that students can make use of weak social ties via university-employer engagement activities on campus, the connections possessed by career development practitioners, and through engagement in work experience and employment. Bridgstock (2019) argues that university students should graduate with knowledge and skills to build professional networks and to understand how different types of relationships can support their work.

Building networks through digital platforms is increasingly important (Bridgstock, Jackson, et al., 2019) and universities can support students' development of capabilities to engage with a wider network (Brown, Healy, Lexis, et al., 2019). However, there may be some differences between building networks online and in-person. Davis et al. (2020) found that frequency of use of social network sites is a stronger predictor of network benefits than number of connections. In addition, networking capability was found to mediate relations between extraversion and number of contacts, and between extraversion and frequency of usage of social networking sites. Networking capability also mediated relations between protean career orientation and number of contacts, and between protean career orientation and frequency of usage of social networking sites.

Identity Capital. Identity capital, according to Tomlinson (2017a), refers to "the level of personal investment a graduate makes towards the development of their future career and employability" (p. 345). Identity capital includes the ability to articulate a career narrative based on previous experiences. Advantages are bestowed on individuals who engage in developmental activities that are directed toward the labour market. Tomlinson focusses heavily on the narration of an identity, or the retelling of experiences to potential employers

that demonstrate the acquisition of desired knowledge, skills and behaviours. Missing from this approach is specificity around how identities, particularly how career identity is formed.

Meijers (1998) defines career identity as an "I-structure" which is constructed by an individual through exploring and experiencing their environment. Career identity develops through the way in which these experiences are incorporated into the self-concept, rather than being the sum of the experiences, which is implied through Tomlinson's (2017a) definition of identity capital. Furthermore, Meijers (1998) argues that the development of career identity involves answering two key questions. The first is about the meaning of work in and for one's life. The second is about how one's work is meaningful to other people.

Praskova et al. (2015a) found positive relations between level of engagement in career exploration and planning, and clarity of career identity. In addition, clarity of career identity was positively related to higher levels of perceived employability and lower levels of career distress. Praskova and colleagues found that higher levels of engagement in career exploration and planning could increase career distress for those with less clear career identities, possibly due to raising uncertainty and stress levels.

Another identity concept is that of future work selves, which Strauss et al. (2012) defined as "representations of the self in the future that encapsulate individually significant hopes and aspirations in relation to work" (p. 581). Future work selves are cognitive representations that are positive, oriented towards work, and anchored in the future. Strauss and colleagues found that a salient and elaborate picture of the future work self, acts as a motivator to engage in proactive career behaviour. Their measure of future work-self salience explained variance in proactive career behaviour above and beyond the variance explained by career identity.

Cultural Capital. Several scholars take a Bourdieusian approach to defining cultural capital. Tomlinson (2017a) conceptualises cultural capital as the accumulation of "culturally

valued knowledge, dispositions and behaviours that are aligned to the workplaces that graduates seek to enter" (p. 343). Caballero et al. (2020) argues that cultural capital consists of work culture which is developed through the work-related values of the person's social network; and personal circumstances, whereby an individual's family and social advantages can influence the willingness of individual's to be geographically mobile and how many hours they are prepared to allocate to work. Caballero and colleagues found that work culture had a stronger relationship with perceived employability than did personal circumstances.

Bourdieu (1986) theorised that cultural capital exists in three forms: an embodied state, such as dispositions; an objectified state in the form of cultural artefacts; and an institutionalised state, such as educational qualifications. Cultural capital needs certain circumstances to be present to be converted into economic capital (i.e., money). In terms of educational qualifications, Bourdieu argues that economic capital is converted into cultural capital through time, effort, and expenses to obtain the qualification. In turn, the ability to convert qualifications into employment is dependent on the scarcity of jobs requiring the qualification.

Bourdieu (1986) argues that the holders of economic capital (i.e., employers) put holders of cultural capital (i.e., job applicants) into competition with each other. University students and graduates do seem to be aware of the importance to employers of certain activities that indicate possession of personal attributes and skills (Thompson et al., 2013; Wilton, 2014). A cross-cultural study of graduates in three countries found that graduates signal their cultural capital in alignment with the recruitment practices of employers in those countries (Saito & Pham, 2018). For example, Australian graduates highlight their work experience and good academic results; Japanese graduates attempt to show a good cultural fit to the company; and Vietnamese graduates emphasise personal networks. Although other

research has found differences in the views of employers and students as to which extra-curricular activities are relevant (Kinash et al., 2016).

Psychological Capital. Tomlinson (2017a) argues that psychological capital is an important form of capital that enables graduates to adapt and respond to career challenges. Psychological capital (PsyCap) is a higher order construct that incorporates dimensions of hope, efficacy, resilience and optimism (Luthans & Youssef-Morgan, 2017). Hope is defined as a positive motivational state which includes agency and pathways (planning to meet goals) (Snyder, 1995). Domain-specific applications of hope include vocational (Diemer & Blustein, 2007) and work hope (Juntunen & Wettersten, 2006). Vocational hope has been found to contribute to career adaptability (Diemer & Blustein, 2007). Efficacy refers to the confidence to perform a task. Resilience is defined as the capacity to bounce back from setbacks and represents deployment of positive adaptation patterns or processes to capitalise on personal, social, or psychological assets. Optimism is a positive style that attributes positive events to personal, permanent, and pervasive causes, and interprets negative events in terms of external, temporary, and situation-specific factors (Luthans & Youssef-Morgan, 2017). Optimism in the career domain contributes to career satisfaction (McIlveen et al., 2013) and has been found to mediate relations between personality and career engagement (McIlveen & Perera, 2015).

2.3.2 Self-Perceived Employability

Self-perceived employability is concerned with how an individual judges their ability to obtain and maintain employment (Rothwell et al., 2008; Vanhercke et al., 2014). Rothwell et al. (2008) incorporates two internal variables: self-belief and ambition; and three external variables: perception of the university's reputation, the status of the field of study, and awareness of opportunities in the labour market. Wittekind et al. (2009) argues that three

variables are important to perceived employability—qualifications, openness to develop new skills or change jobs, and labour market knowledge.

Research into the contribution of internal and external variables to perceived employability has produced inconsistent findings. Álvarez-González et al. (2017) found that internal variables—self-confidence and generic skills, have larger positive relations with perceived employability than do external variables such as perceptions of the labour market and satisfaction with support provided by the university and teaching staff. Donald et al. (2019) found that human capital, careers advice, and protean career orientation were positively related to self-perceived employability. However, Ergün and Şeşen (2021) found that perceptions about the labour market was a larger contributor to perceived employability than internal variables, such as generic skills and academic performance. Similarly, Vargas et al. (2018) found that students studying disciplines with stronger employment outcomes in the Spanish labour market (e.g., health science) had higher self-perceived employability than students studying disciplines with poorer employment outcomes (e.g., humanities). In addition, Vargas et al. (2018) found that participation in work experience and the reputation of the university had no impact on perceived employability. Although other research has found increases in perceived employability after completion of a work integrated learning experience (Harris-Reeves & Mahoney, 2017) and career education interventions (Hernandez-Fernaud et al., 2017).

Self-perceived employability differs from the employability capital and dispositional employability approaches in that it includes perceptions of external variables. Perceived employability is an outcome of career adaptability and career adaptive behaviour (Atitsogbe et al., 2019; Rudolph, Lavigne, & Zacher, 2017), and employability capital and dispositions (Forrier et al., 2015; Vanhercke et al., 2014). In turn, perceived employability drives career adaptive behaviours. In a study of employees, Forrier et al. (2015) found that perceptions of

internal employability related with job changes within the organisation, and perceptions of external employability related with employees obtaining employment in a different organisation. An Italian study found positive relations between perceived employability and employment outcomes of university graduates (Caricati et al., 2016). Other variables that have been found to be positively related to perceived employability, include psychological capital (Kasler et al., 2017), career calling (Praskova et al., 2015b), locus of control (Curic Drazic et al., 2018) and goal orientation (Forsythe & Walla, 2017).

2.3.3 Dispositional Employability

Dispositional employability is a multidimensional model (Fugate et al., 2004) which incorporates dimensions of career identity, personal adaptability, and social and human capital (Fugate et al., 2004). Although dispositional employability incorporates forms of capital, this approach to employability differs in that the dimensions of dispositional employability are conceptualised as representing psychosocial resources that facilitate the enactment of proactive behaviours directed toward obtaining employment (Fugate & Kinicki, 2008; Fugate et al., 2004). Dispositional employability has been found to predict emotions and affective commitment to organisational change (Fugate & Kinicki, 2008), job search intensity (McArdle et al., 2007; Tomas & Maslić Seršić, 2017), self-esteem and re-employment of unemployed workers (McArdle et al., 2007), engagement in professional development (Torrent-Sellens et al., 2016), and perceptions of future career prospects (Cerdin et al., 2020).

In an elaboration of the conceptualisation of dispositional employability, Fugate and Kinicki (2008) proposed that individuals would exhibit a number of attributes. Specifically, they would be open to change or be positive about changes at work; be resilient through a sense of control over their career; be optimistic about the future and the possibilities of opportunities; be proactive in seeking out information about future career opportunities;

exhibit motivation directed toward career planning and career self-management; and incorporate their work or career into their personal identity. Fugate and Kinicki indicate that these attributes are traits within the work and career domain, as distinct from general proactive personality, and are likely to foster proactive behaviour through a contribution to career adaptability.

Further research into dispositional employability is required to test hypothesised relations with career adaptability, choice of job search methods, and other important career outcomes (Fugate & Kinicki, 2008). Research focusing on the relations between dispositional employability and employment outcomes of university students transitioning from study to employment is required. Therefore, there is a need to further explore how dispositional employability facilitates university graduates' engagement in career adaptive behaviours and ultimately achievement of employment outcomes. Career construction theory (Savickas, 2005, 2013) provides an avenue for research to explain how employability contributes to achievement of employment outcomes and will be discussed in this chapter.

2.4 Career Adaptive Behaviours

Career adaptive behaviours are important to the development of employability and have been found to contribute to a range of success, satisfaction, and development outcomes (Rudolph, Lavigne, Katz, et al., 2017; Rudolph, Lavigne, & Zacher, 2017; Savickas & Porfeli, 2012). Lent and Brown (2013) define career adaptive behaviours as proactive and reactive behaviours directed toward career and educational development. Career adaptive behaviours that students and graduates enact include developing employability skills; career exploration; acquiring experiences through work integrated learning, employment, or volunteering; making career decisions; and managing transitions from study to employment (Lent & Brown, 2013, p. 559). The nomological network of career adaptive behaviours include characteristic adaptations (McAdams & Pals, 2006; Rottinghaus & Miller, 2013),

proactive career behaviour (e.g., Fugate, 2006; Spurk, 2021; Strauss et al., 2012), and adapting responses (Savickas, 2005, 2013).

Within the higher education literature, research has identified a range of activities that students engage in to develop their employability, such as work experience, further education (e.g., postgraduate study), skill development (Brown, Healy, Lexis, et al., 2019), volunteering, part-time employment, networking, international exchanges, mentoring, and development of portfolios (Clark et al., 2015; Jackson & Bridgstock, 2021; Kinash et al., 2016). Students also use information- and help-seeking behaviours, such as career advice, as a way to build employability (Donald et al., 2018), and some students focus on achieving high grades (Greenbank, 2015).

The career adaptive behaviours supported by universities (e.g., volunteering, work experience, development of graduate attributes) have been found to contribute to perceived improvement in employability rather than employment outcomes (Jackson & Bridgstock, 2021). A distinction needs to be made between career adaptive behaviours that are developmental activities and those that are directly targeting the achievement of employment (i.e., job search behaviour). Whilst a student undertaking work experience may be offered a job, that scenario is only likely to occur if the employer offers work experience to students as a recruitment strategy. The more likely outcome from a work experience, for most students, is the development of human and social capital. In Australia, workplace laws require work experiences, such as unpaid internships, to meet the definition of a vocational placement that is part of a higher education course (Fair Work Ombudsman, 2017), so in practice, internships after graduation are rare. In a meta-analysis of job search research, van Hooft et al. (2021) found a small correlation between preparatory job search behaviour (e.g., locating job information) and employment ($r_c = .08$), compared with a medium correlation between active job search behaviour (e.g., applying to job advertisements) and employment ($r_c = .24$).

The vocational psychology literature has three significant theories or frameworks that explain how psychosocial processes support enactment of career adaptive behaviours: an integrative framework for career behaviour (Rottinghaus & Miller, 2013), social cognitive career theory (Lent & Brown, 2013; Lent et al., 1994), and career construction theory's career adaptation model (Savickas, 2005, 2013; Savickas & Porfeli, 2012). These theories and frameworks will be explored in the next section.

2.5 Theoretical Perspectives

2.5.1 Integrative Framework for Career Behaviour

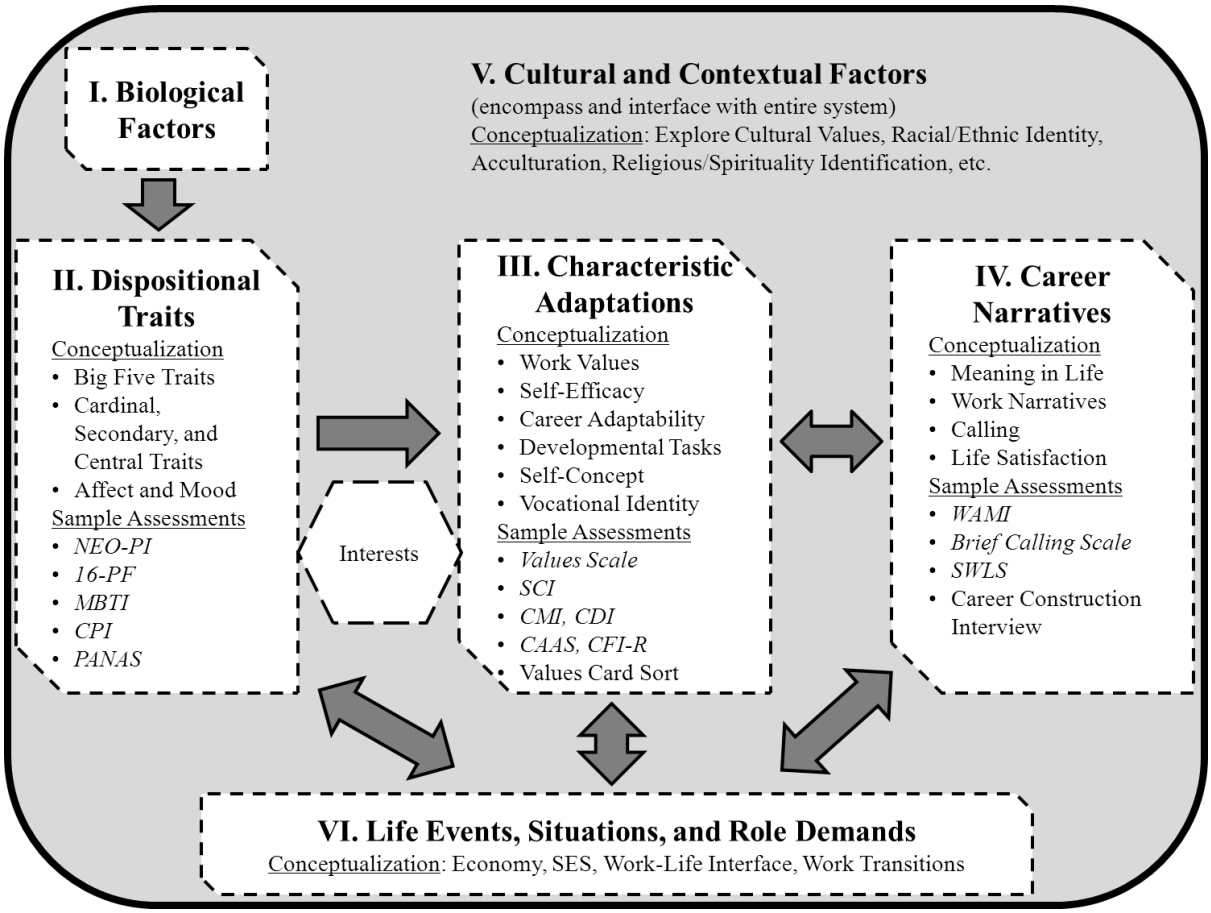
Rottinghaus and Miller (2013) present an integrated framework of personality that combines different perspectives of personality to enable a richer and more nuanced understanding of how individuals view themselves. The framework describes the interactions of three major components: dispositional traits, characteristic adaptations, and career narratives. Dispositional traits have a biological basis through the expression of genes and brain structures which contributes to their relative stability. Characteristic adaptations represent the interaction of the person with the environment in how they respond to career development tasks, and are influenced by life events (e.g., illness, accident), situations (e.g., economy, sociopolitical influences), and role demands (e.g., work, family). Career narratives reflect the stories that people use to make meaning of the self and their experiences. Cultural and contextual factors contribute to how the major components of this model interact. This framework has been used to guide the design of career development interventions (e.g., Rottinghaus & Eshelman, 2015) and will be used in this paper to outline an integrative framework applied to career behaviour. It is important to note that the integrative framework serves to organise researchers thinking about concepts prominent in the research literature; however, it is not a theory per se.

2.5.1.1 Dispositions

Dispositional traits are broad and relatively stable—over time and situations—styles of thinking, feeling and behaviour (McAdams & Pals, 2006) that can affect career choice (Rottinghaus & Miller, 2013), facilitate proactive behaviour, and development of knowledge, skills and abilities (Fugate & Kinicki, 2008). Personality traits, such as conscientiousness, extraversion, and openness to experience have been found to relate to adaptive career behaviours (Lent & Brown, 2013).

Figure 1

Rottinghaus et al., (2015) Integrative Personality Framework



Note. From "Converging vistas from scores and stories: An integrative approach to career counselling" by P. J. Rottinghaus, A. D. Miller, A. J. Eshelman, & N. Sahai, in K. Maree & A. Di Fabio (Eds.), Exploring new horizons in career counselling (p. 29), 2015, Sense Publishers. Copyright 2015 by Sense Publishers. Reprinted with Permission.

2.5.1.2 Characteristic Adaptations

Characteristic adaptations are "specific motivational, social-cognitive, and developmental variables that are contextualised in time, situations, and social roles" (McAdams & Pals, 2006, p. 212). Characteristic adaptations include variables that are likely to respond to interventions, change over time, or are associated with motivation and cognition (McAdams & Pals, 2006), such as goals, values, outcome expectations, career adaptability, self-efficacy, and developmental tasks (McAdams & Pals, 2006; Rottinghaus & Miller,

2013). As characteristic adaptations are malleable, these variables can be targeted in interventions aimed to enhance employability or career outcomes.

2.5.1.3 Career Narratives

Individuals use career narratives, or life themes to develop an identity, shape behaviour, and find a role in social life. These stories evolve over time to incorporate new experiences, future hopes and reconstructed past events (McAdams & Pals, 2006) and give purpose and meaning to significant events (Rottinghaus & Miller, 2013). The use of career narratives in enhancing employability is likely to be important and will be examined in this doctoral research to develop an understanding of students' selection and use of career adaptive behaviours.

2.5.2 Social Cognitive Career Theory

The variables that relate to the latent factors of dispositional employability (Fugate et al., 2004) and perceived employability (Rothwell et al., 2008) are labelled as person input and background contextual factors in social cognitive career theory (SCCT; Lent & Brown, 2013; Lent et al., 1994). SCCT (see Figure 2) is based on Bandura's (1986) social cognitive theory and emphasises the ways in which individuals exercise personal agency toward career development tasks (Lent et al., 1994). There are five models of SCCT which explain how individuals develop interests, make choices, achieve career success, experience well-being at work, and self-manage their career over a lifetime (Lent, 2013; Lent & Brown, 2013; Lent et al., 1994). The SCCT model of career self-management (Lent & Brown, 2013) shows a learning cycle commencing with learning experiences, through self-efficacy and outcome expectations to goals, actions, outcomes, and then feeding back to learning experiences. Contextual influences moderate the relationships between goals, actions, and outcomes. Antecedents to goals include a variety of person inputs (e.g., dispositional traits, gender, personality, ethnicity, or sexual identity) and background contextual factors (e.g., education,

social class) (Lent & Brown, 2013). Lent and Brown note that the career-self management model is concerned specifically with how psychosocial factors drive individuals' decision-making, goal setting, and actions toward achieving career management outcomes such as employment. The pathways in SCCT have been supported in other research (Sheu & Bordon, 2017) and has been demonstrated to predict outcomes in relation to interests, making career choices, and experiencing well-being at work (Lent, 2013; Lent & Brown, 2013). Although the career self-management model of SCCT is relatively new, research has found that the model has efficacy in predicting outcomes related to career self-management (e.g., Lent et al., 2016; Thompson et al., 2017).

Limited research has been undertaken into the person inputs (e.g., dispositions, gender, age, ethnicity, sexual identity) and background contextual factors (e.g., education, social class, labour market demands) and how these contribute to learning experiences, self-efficacy and outcome expectation components of the SCCT model (Sheu & Bordon, 2017). Sheu and Bordon also note that background contextual factors, like unemployment rates, have not been investigated. Research into perceived employability (Rothwell et al., 2008) has examined variables such as labour market demand and university brand, but these were not examined using SCCT as a theoretical framework. Research using SCCT could examine how factors like the graduate employment labour market contributes to outcome expectations and job search self-efficacy.

Lent and Brown (2013) called for further research into the antecedents of career adaptive behaviours, including personal attributes and background contextual affordances that enable or inhibit adaptive behaviours. This is an important gap in the literature that needs to be researched. It is also a point of connection between the employability literature—particularly notions of dispositional and perceived employability—and the well-established

social cognitive career theory (Lent, 2013; Lent et al., 1994; Lent et al., 2016) which explains how individuals obtain employment outcomes via goal directed career adaptive behaviours.

2.5.3 Career Construction Theory

CCT (Savickas, 2013) provides an avenue for research to explain how employability contributes to achievement of employment outcomes. CCT argues that careers are socially and individually constructed representations of reality. Taking a contextualist approach, Savickas views the development of individuals' careers as being the result of adaptation to the environment, rather than as a result of a self-maturation process. There are three components to individuals' self-construction. The *self as actor* represents the behaviours individuals engage in from childhood through to adulthood, that develop their interests, skills, abilities and habits. The *self as agent* represents the strivings to engage in the world and the adaptation to vocational tasks, transitions, and traumas. The *self as author* represents the stories that people tell of their career that narrates an identity.

Pertinent to employability, CCT asserts that individuals adapt to vocational development tasks (i.e., preparation for entering the workforce), occupational transitions (i.e., from one job to another), and work traumas (i.e., unplanned and unwanted career events) (Savickas, 2013). This adaptation process is understood in terms of four factors conceptualised as a chain of effects: Adaptivity→Adaptability→Adapting→Adaptation (Savickas, 2013; Savickas & Porfeli, 2012). This putative chain of effects is evident in studies of direct and indirect relations among adaptivity, adaptability, and adapting (Hirschi et al., 2015; Johnston, 2018; Perera & McIlveen, 2017; Rudolph, Lavigne, & Zacher, 2017).

2.5.3.1 Adaptivity

Adaptivity is an individual's willingness to respond to vocational developmental tasks, occupational transitions, and work traumas (Savickas, 2013). Adaptivity may include proactive personality (Brown et al., 2006; Hirschi et al., 2015), core self-evaluations (Hirschi

et al., 2015), psychological capital (Pajic et al., 2018) and similar constructs including resilience, hope, and optimism (Buyukgoze-Kavas, 2016), and distinct latent profile combinations of Big Five dispositional traits (Perera & McIlveen, 2017). A meta-analytical study (Rudolph, Lavigne, & Zacher, 2017) found that dispositional traits explained 50-60% of the variance in career adaptability. Thus, there is evidence to suggest that operationalisation of adaptivity and its effects on adaptability should include some measures of dispositional variables. The conceptualisation of dispositional employability dimensions of work and career resilience, proactivity, openness to change, optimism, and career motivation (Fugate & Kinicki, 2008) appear to fit with adaptivity.

2.5.3.2 Adaptability

Savickas (2005) conceptualises career adaptability as psychosocial resources an individual utilises to respond to vocational developmental tasks, occupational transitions, and work traumas. These adaptability resources include dimensions of concern, control, curiosity, and confidence (Savickas, 2005, 2013). Each dimension of career adaptability is associated with a set of attitudes, behaviours, and competences. *Concern* is about having an orientation to the future. Savickas describes career as an idea rather than a behaviour and is represented in the stories we tell about our vocational past, present and future. Having a concern for the future, connects the present and past to a possible future, and enables an individual to utilise attitudes of planfulness and optimism to and engage in behaviours that prepare them for future vocational roles. *Control* is an agentic approach to taking ownership and responsibility for constructing one's own career. Attitudes of assertiveness and decisiveness support individuals to engage in behaviours to navigate vocational developmental tasks and occupational transitions. Curiosity is about exploration of the self and the vocational environment to gain knowledge about one's abilities, interests and values, occupations, industries, and labour market trends. This knowledge enables individuals to make career

decisions that are more realistic than decisions made in the absence of information. *Confidence* signifies self-efficacy beliefs associated with the individual's ability to undertake behaviours that support achievement of educational and vocational choices.

Career adaptability has been found to positively relate to proactive career behaviour (Spurk et al., 2020), self-perceived internal and external marketability (Spurk et al., 2016), career planning, career exploration, and self-efficacy (Rudolph, Lavigne, & Zacher, 2017). Career adaptability and proactive career behaviour has been found to grow in parallel over time; however, individuals self-regulate their engagement in proactive behaviour in relation to their adaptive resources (Spurk et al., 2020). Individuals who have high levels of career adaptability decrease their engagement in proactive career behaviours, either due to over-optimism that they will achieve their career goals, or as a way of regulating effort, whereas individuals who have low levels of career adaptability increase their proactive career behaviours (Spurk et al., 2020).

2.5.3.3 Adapting

Adapting responses are the enactment of behaviours directed toward resolving career changes (Savickas, 2013), and include behaviours—career planning, career exploration, occupational self-efficacy and career decision-making self-efficacy—that have been found to be positively related to career adaptability (Johnston, 2018; Rudolph, Lavigne, & Zacher, 2017). Following the chain of effects model, career adaptability mediates the relation between adaptivity and adapting responses, including relations between personality and career engagement (Nilforooshan & Salimi, 2016), core self-evaluations and proactivity with adapting responses (Hirschi et al., 2015).

2.5.3.4 Adaptation

Adaptation results are the outcomes (determined by success or satisfaction) of adapting responses (Savickas, 2013) and include career, life, job, and school satisfaction;

affective organisational commitment; lower job stress; higher income; work engagement; and career identity (Rudolph, Lavigne, & Zacher, 2017). Put simplistically, the ultimate adaptation outcome of employability is being employed. Thus, taken together, Adaptivity→Adaptability→Adapting are the multifactorial constituents of employability that are the antecedents of employment (adaptation).

Recent research provides evidence of direct and indirect relations among elements of the career adaptation model (Hirschi et al., 2015; Johnston, 2018; Öztemel & Yıldız Akyol, 2021; Perera & McIlveen, 2017; Rudolph, Lavigne, & Zacher, 2017). However, there is scant literature about the career adaptation model and graduate employability. Furthermore, few qualitative studies have been published to examine how individuals use adapting responses to address career challenges (Bimrose et al., 2019; Brown et al., 2012; Wehrle et al., 2019), particularly in relation to the development of employability and transition from university to employment.

2.6 Summary

Employability can be understood as a psychosocial process that facilitates the enactment of proactive behaviours directed toward career self-management (Di Fabio, 2017; Fugate et al., 2004; King, 2004). This psychosocial approach takes a wider perspective of graduate employment—beyond qualifications, skills, knowledge—to include the contributions of human, social, and psychological capital (Clarke, 2018; Williams et al., 2016), and students' and graduates' self-perceptions of employability (Rothwell et al., 2008; Rothwell et al., 2009). Several scholars have argued that employability is a multidimensional construct that includes human, social, psychological, identity, and cultural capital (Clarke, 2018; Fugate et al., 2004; Tomlinson, 2017a); however, these scholars hold different views as to the way in which these forms of capitals contribute to employability. Clarke (2018) takes a systems level view to integrate aspects of individual possession of capital and behaviours,

and the influence of institutional and contextual factors. Fugate et al. (2004) views employability as a psychosocial process whereby dispositions enable individuals' to proactively and reactively respond to opportunities and challenges in the labour market. Tomlinson (2017a) views employability capital as a set of resources that confer benefits on individuals. The current conceptualisations of employability focus on what employability is (or isn't) with little research on understanding how employability enables individuals to engage in career adaptive behaviours directed toward employment attainment and maintenance.

2.7 Research Questions

The overall aim of this doctoral research is to explore the psychosocial factors of employability (i.e., dispositional employability and career adaptability) that support university students' engagement in career adaptive behaviours; and to apply these findings to inform the design of evidence-based curricula and extra-curricular programs and initiatives to enhance graduate employability.

The literature review chapter has explored the employability literature and set out a case for exploration of employability as a psychosocial resource, rather than the dominant view of employability as a set of skills and knowledge. The literature review has integrated knowledge from the higher education and vocational psychology literatures and has identified career construction theory as a potentially relevant theory to investigate the relations between dispositional employability and related outcomes.

Three research questions are identified that will be addressed through this Thesis:

1. What is the relation between graduates' skills and qualities and employment outcomes?
2. What are the relations between dispositional employability and measures of career adaptability, adapting responses, and adaptation results?

3. Which career adaptive behaviours do university students consider helpful in enhancing their employability?

Each research question will be addressed through a stand-alone research article. Accordingly, this Thesis is designed as a portfolio of three research articles that will examine different aspects of dispositional employability and career adaptive behaviours. The first question will be addressed in Study 1, presented in Chapter 3; the second research question addressed in Study 2, presented in Chapter 4; and the third research question will be addressed in Study 3, presented in Chapter 5.

CHAPTER 3: STUDY 1

Study 1 explores the relations between graduates' satisfaction with their skills and qualities and employment outcomes, overall course satisfaction, and perceptions of quality teaching. Data was accessed from the Australian Government's national Graduate Outcome Survey across three years (2015-2017).

This study has been published as a journal article[1] and is reproduced in this chapter. The following text is from the author's accepted manuscript. The formatting, including location of tables and figures, has been changed to be consistent with the presentation style of this Thesis.

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[1] There have been some modifications to the heading, figure, table, and page numbers to ensure the Thesis works as a whole document. There are variations in spelling due to the requirements of journals for using Australian, English, or American spelling conventions. The referencing style used by the journal does not use APA7. The text pasted into this Thesis is without the citation codes to keep the text the same as in the published article.

Relations Between Graduates' Learning Experiences and Employment Outcomes: A Cautionary Note for Institutional Performance Indicators

Student learning experiences and graduate outcomes are, in part, evaluated using institutional performance indicators. Publicly available data from Australian government national surveys of university graduates was accessed. We explored whether the subscales of the Course Experience Questionnaire (CEQ): Good Teaching Scale (GTS); Graduate Skills Scale (GSS); and Graduate Qualities Scale (GQS) predicted graduates' decisions to take further studies, their employment status, and their overall satisfaction. For the specific subscales, GTS was found to predict graduates' overall satisfaction with their course experience, and the GSS and GQS subscales combined were found to predict negligible increases in employment outcomes. Our findings highlight the imperative for higher education leaders to critically examine discourse about the link between graduates' skills and qualities with their employment outcomes. We suggest future research focus instead on investigating alternative conceptions of employability that are concerned with the relations between psycho-social capital and employment outcomes.

Keywords: graduate attributes; skills; qualities; employment; employability; outcomes; course satisfaction; performance-based funding

3.1 Introduction

Recently the Australian Government released a report that recommends the introduction of performance-based funding of universities linked to achievement of four performance indicators, namely: student success, equity group participation, graduate outcomes, and student experience (Commonwealth of Australia 2019). The purpose of this new funding arrangement is to "to ensure universities focus sufficient attention on the quality of their teaching and student support to ensure the best possible graduate outcomes" (p. 3). Allocation of funding would be provided for institutions improving performance across the four performance indicators (Commonwealth of Australia 2019). Two of the performance indicators of interest in this present investigation include the graduate outcome indicator and the student experience indicator. These two performance indicators are collected via the Graduate Outcome Survey (GOS) which includes items on destination outcomes (e.g., further study and employment), and the Course Experience Questionnaire (CEQ) scales which measures graduates' perception of teaching quality and development of generic skills and graduate qualities (QILT 2020). Thus, universities' scores on these indicators represent a "high stake" outcome with respect to performance-based funding.

This paper examines the implicit assumption in the Australian Government plan that quality of teaching and student experiences is linked to graduate outcomes as measured by achievement of employment. We begin by reviewing relevant literature on employability and employability skills followed by a brief history of the CEQ (Ramsden 1991), which provided the foundation for existing national surveys.

3.2 Employability

While performance funding mechanisms and the salience of the CEQ are issues specific to Australia, graduate employment outcomes and enhanced graduate employability are expected of universities globally. In higher education, the teaching and assessing of

graduate attributes, or generic skills and qualities, is explicitly connected with employability (Hammer et al. 2020; Barrie 2006). Despite continued disagreement and confusion in higher education about the concept of employability, the focus on the development of human capital via teaching and assessing graduate attributes remains dominant in higher education (Hammer et al. 2020; Oliver and Jorre de St Jorre 2018). However, many scholars take a broader view of employability that includes human, social, psychological, and cultural capital (Tomlinson 2017; Clarke 2018), and the importance of the process of career self-management to support the achievement of employment (Okay-Somerville and Scholarios 2017; Bridgstock 2009; Jackson and Bridgstock 2020). We take the definition of dispositional employability (Fugate et al. 2004): that employability is a psychosocial process that facilitates proactive behaviours of individuals to adapt or respond to opportunities or challenges in the labour market. The dimensions of dispositional employability include human and social capital, personal and career adaptability, and career identity (Fugate et al. 2004). Dispositional employability has been found to predict positive emotions and affective commitment to organisational change (Fugate and Kinicki 2008), job search intensity (Tomas and Maslić Seršić 2017; McArdle et al. 2007), and self-esteem and re-employment of unemployed workers (McArdle et al. 2007).

3.3 Learning Experiences and Perceived Skill Development

The Australian Government uses its Tertiary Education Quality and Standards Agency (TEQSA) to regulate and monitor the quality of higher education. The student experience and graduate outcomes are, in part, evaluated using data collected from annual national surveys of graduates' reports of satisfaction and outcomes. Established in the early 1990s, the CEQ (Ramsden 1991; Wilson et al. 1997) has provided an enduring foundation for the Australian national surveys. The CEQ has been evaluated in other countries and appears to be a valid measure in different cultures (Byrne and Flood 2003; Stergiou and Airey 2012; Law and

Meyer 2011; Richardson 1994). Since the original development of the CEQ, it has expanded beyond the original subscales measuring good teaching, clear goals, appropriate workload, and assessment, to include the *generic skills scale* (Wilson et al. 1997; Ramsden 1992). The new subscale would address a growing interest in graduates' employability and capacity for lifelong learning, and the ability to identify desirable generic skills for the workplace (Wilson et al., 1997, p. 36). Further subscales were added to the CEQ battery for *graduate qualities*, and a range of others related to student support and motivation (McInnis et al. 2001; Griffin et al. 2003). These progressive amendments to the CEQ, particularly the generic skills scale, affirmed an important shift in higher education toward an era of greater accountability and, moreover, graduate employability.

A key response from universities has been to embed graduate attributes, including generic or employability skills into university curricula. Recent research affirms the continued importance of this strategy (Hammer et al. 2020), as does Australia's 2015 Higher Education Standards Framework (Commonwealth of Australia, 2015). Continued sector consensus about the importance of graduate attributes, including employability skills, for student employability has influenced the development and use of government-funded quality assurance instruments, such as the CEQ. These instruments measure, amongst other things, graduates' perceptions of their generic skills development. The significance of this quality assurance strategy for the Australian Higher Education sector is amplified by Australian government plans to allocate additional funding on the basis of university performance on these indicators. Students' perceptions of their skill development and the quality of their university and degree have been found to be important contributors to confidence in achieving employment outcomes (Rothwell et al. 2008; Rothwell et al. 2009; Álvarez-González et al. 2017).

3.4 The Present Research

The research presented here focuses specifically on the subscales of the CEQ, the Good Teaching Scale (GTS), Generic Skills Scale (GSS), and the Graduate Qualities Scale (GQS). Research analysing the GOS dataset in the past decade has found increased probability of obtaining an employment outcome for students with higher scores on the GSS and GSQ scales, albeit with small effect sizes (Jackson 2014), as well as significant differences between a range of demographic variables and scores on the GSS and GQS scales (Jackson 2016). However, Jackson's research did not conduct confirmatory factor analysis on the CEQ before testing the relations between the CEQ scales and employment outcomes, and since those studies were conducted the government contract to administer the CEQ and GOS has been awarded to another research team who made some changes to the way employment outcomes were measured. Therefore, it is timely to re-examine data from the GOS and CEQ to independently validate the psychometric properties of the CEQ and to test the relations between the CEQ and employment outcomes.

The present research had two main aims with respect to the validity of the CEQ. First, we aimed to determine the factor structure of the CEQ subscales by using recent GOS datasets (i.e., 2015 to 2017). Second, we aimed to test whether the CEQ subscales predicted graduates' overall satisfaction with studies, and graduate outcomes as measured by overall employment and further education. The presence of positive predictive relations would be additional evidence of their validity and, moreover, their utility as indicators of graduate outcomes.

3.5 Method

3.5.1 Participants

Graduates of Australian higher education institutions voluntarily provided their responses to the national GOS approximately four months after completing their degrees. The

present study focused on the data for Australian citizens who were graduates of undergraduate bachelor's degrees completed at Australian institutions, in line with the proposed performance indicators which intends to use data from domestic undergraduates (Commonwealth of Australia 2019). The combined dataset included responses from N = 110685, participants. The median age was 24 years for the three surveys separately and combined; the means for age were M = 26.00 (SD = 8.2) in 2015, M = 24.84 (SD = 87.8) in 2016, M = 24.35 (SD = 7.5) in 2017, and M = 24.72 (SD = 7.7) for the three years combined. The participant characteristics appear in Table 2. In reading the participant characteristic table, it is important to note that the GOS commenced in 2015 as a limited pilot, thus, there is a relatively lower count of participants for that year. The similarity of proportions of these demographic variables is an indication of their equivalence across the survey years. The count and proportions for fields of study are summarised in Table 3.

Table 2

Participant Characteristics by Year of Collection and Total Years Combined

	Year of Collection							
	2015		2016		2017		Years Combined	
Participant characteristics	*n*	%	*n*	%	*n*	%	*n*	%
All participants	9385	100	52798	100	48502	100	110685	100
Male	3683	39.2	18238	34.5	16849	34.7	38770	35.0
Female	5702	60.8	34554	65.4	31651	65.3	71907	65.0
Indigenous	110	1.2	610	1.2	558	1.2	1278	1.2
Non-English speaking background	191	2.0	954	1.8	915	1.9	2060	1.9
Person with a disability	651	6.9	3292	6.2	3009	6.2	6952	6.3

Table 3

Count and Percentage of Participants' Degrees by Fields of Education

	Year of Collection							
	2015		2016		2017		Years Combined	
Fields	*n*	%	*n*	%	*n*	%	*n*	%
Natural and Physical Sciences	1046	11.1	6252	11.8	6219	12.8	13517	12.2
Information Technology	348	3.7	1448	2.7	1201	2.5	2997	2.7
Engineering and Related Technologies	556	5.9	1920	3.6	1402	2.9	3878	3.5
Architecture and Building	160	1.7	880	1.7	784	1.6	1824	1.6
Agriculture, Environmental and Related Studies	173	1.8	842	1.6	745	1.5	1760	1.6
Health	929	9.9	9571	18.1	10351	21.3	20851	18.8
Education	573	6.1	4566	8.6	4145	8.5	9284	8.4
Management and Commerce	2166	23.1	9260	17.5	7811	16.1	19237	17.4
Society and Culture	2782	29.6	13801	26.1	11978	24.7	28561	25.8
Creative Arts	652	6.9	4258	8.1	3866	8.0	8776	7.9

3.5.2 Measures

GOS datasets are available for public access, analysis, and reporting from higher education institutions and the Social Research Centre (www.qilt.edu.au) which manages administration of the GOS on behalf of the government and institutions. Complete descriptive reports are available online at the public portal www.qilt.edu.au. We extracted the following data because they are the most relevant from the CEQ applicable to the aims of this research.

3.5.2.1 Course Experience Questionnaire Scales

Three scales from the CEQ: GTS; GSS; and GQS were included in this research. For each scale, the scores were calculated as an average of all items. Participants rated their level of agreement with each item by using a five-category Likert-type scale ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). We used Cronbach's α coefficient to assess the internal consistency of the scales and found them to be high for each survey year.

Good Teaching Scale (GTS). The GTS measures graduates' perceptions of the quality of aspects of good teaching practice such as provision of feedback, making learning interesting, and motivating students to learn (Byrne and Flood 2003). A sample item is "the teaching staff normally gave me helpful feedback on how I was going". The GTS was found to have good internal consistency (α = .90 to α = .91) across the three years of data collected in this current study.

Graduate Skills Scale (GSS). The GSS measures graduates' perceptions of the extent to which their courses aided the development of generic skills including "problem-solving, analytic skills, teamwork, confidence in tackling unfamiliar situations, ability to plan work and written communication skills" (Wilson et al. 1997). A sample item is "the course improved my skills in written communications". The GSS was found to have good internal consistency (α = .85 to α = .86) across the three years of data collected in this current study.

Graduate Qualities Scale (GQS). The GQS measures graduates' perceptions of "whether the course generated higher-order outcomes and perspectives related to lifelong learning" (Graduate Careers Australia 2016). A sample item is "higher education stimulated an enthusiasm for learning". The GQS was found to have good internal consistency (α = .87) for each of the three years of data collected in this current study.

3.5.2.2 Outcome Variables.

Three outcome variables included in the analysis were overall satisfaction, employment status, and enrolment in further study. These outcome variables are important indicators of higher education quality.

Overall Satisfaction. A single item measuring graduates' overall satisfaction with the course, using a Likert-type scale ranging from 1 = (*Strongly Disagree*) to 5 (*Strongly Agree*). The data analysis required this item to be converted to a binary categorical item, accordingly responses were recoded (0 = not in agreement, 1 = in agreement).

Employment status. The survey coded respondents as (1 = employed, 2 = unemployed, 3 = not in labour market). For the purposes of data analysis, a binary categorical item for labour force status was required. Responses were recoded to (0 = unemployed or not in labour force, 1 = employed).

Further study. A single categorical item requesting graduates to specify whether they had commenced further study (1 = full-time study, 2 = part-time study, 3 = not undertaking further study). The responses were recoded to a binary categorical item for data analysis (0 = no, 1 = yes).

3.5.3 Plan for Data Analysis

Our first aim was to test the factor structure of the CEQ subscales using recent data sets. We explored two potential measurement models: distinct correlated factors (CF) and bifactor (BF) models. CF modelling assumes that the GSS, GQS, and GTS subscales are distinct but nonetheless correlate due to their items' similarities as indicators of graduate outcomes. On the other hand, BF modelling assumes that the items of the three subscales may be organised as one general factor (G-factor) and, alternatively, as three distinct subscales. In addition, we produced another set of models to determine if the GSS and GQS are measures of distinct constructs, as named (i.e., graduate skills, graduate qualities), or measures of the

same construct. Following this initial modelling, we addressed the second aim of the research to explore relations of the CEQ subscales, employment status, further study, and overall satisfaction.

Analyses were conducted in a general latent variable modeling (GLVM) framework. Analyses were conducted using Mplus 8.0 (Muthén and Muthén 1998 - 2017). Solutions were estimated using the Weighted Least Squares Mean-and-Variance adjusted (WLSMV) estimator. All models were estimated while accounting for students' nesting within universities using the design-based correction of standard errors, operationalised via the complex design option in Mplus (Muthén and Muthén 1998 - 2017). Fit assessment was inclusive and involved an evaluation of fit indices, parameter estimates, and alternative models. As the χ^2 can be oversensitive to minor model misspecifications given even moderate-sized samples and contains a restrictive hypothesis test (i.e., exact fit), three approximate fit indices were considered: RMSEA, < .050 and .080 for close and reasonable fit; Comparative fit index (CFI) and Tucker-Lewis Index (TLI), > .900 and .950 for acceptable and excellent fit, respectively (Marsh et al. 2004). For nested model comparisons, because the adjusted χ^2 difference (MD $\Delta\chi^2$) test appropriate for the WLSMV estimator also tends to be sensitive to even trivial differences, changes in the CFI (ΔCFI) and RMSEA (ΔRMSEA) were primarily used. A decrease in the CFI and increase in the RMSEA of less than .010 and .015, respectively, are indicative of support for a more restrictive model (Cheung and Rensvold 2002; Chen 2007). It should be noted that, under WLSMV in Mplus, the default link function is the probit function, which has an inherently unintuitive interpretation. Accordingly, to enhance interpretability of the probit regressions of the binary outcomes on the CEQ dimensions, we computed predicted probabilities from the probit regression coefficients using standard formulas (Muthén and Muthén 1998 - 2017).

3.6 Results

The results are organised in three sections. First, there are descriptive statistics and tests to exclude questions about potential confound effects associated with year of collection. Second, the measurement models are tested to confirm the best factor structure. Third, the models are tested to determine their utility to predict to the graduate outcome variables.

3.6.1 Descriptive Statistics

The means, standard deviations and correlations between variables is displayed in Table 4. It is possible that variations in the year of data collection (e.g., job market) would influence the modelling. Inspection of the descriptive statistics for the GTS, GSS, and GQS in Table 5 reveal some minor differences in mean levels. Thus, we had to exclude the possibility of bias due to survey year and employment status. Accordingly, we used a 3x3 analysis of variance (ANOVA) with the three levels of year of collection (2015, 2016, 2017) and three levels of employment status (employed, unemployed, not in the labour force) as the independent variables. The presence of a statistically significant interaction effect is an alert to potential bias. The large sample sizes increase the chance of finding a statistically significant effect; therefore, we included a measure of effect size to ensure that any significant differences were practically meaningful, rather than merely due to the large sample size.

Table 4

Mean, Standard Deviation (SD), and Correlations for Each Measure

Measure	Mean	SD	GTS	GSS	GQS
GTS	3.55	.82			
GSS	3.89	.67	.668		
GQS	3.96	.68	.700	.859	
OSI	3.94	.67	.696	.710	.754

Note. GTS = Good Teaching Scale, GSS = Graduate Skills Scale, GQS = Graduate Qualities Scale, OSI = Overall Satisfaction.

Table 5

Mean and Standard Deviation (SD) for Each Measure by Year of Collection and Labour Force Status

Year	Labour Force Status	GTS		GSS		GQS	
		Mean	SD	Mean	SD	Mean	SD
2015	Employed	3.49	.83	3.87	.67	3.94	.68
	Unemployed	3.61	.83	3.92	.72	3.99	.75
	Not in labour force	3.74	.77	3.94	.72	4.08	.71
2016	Employed	3.53	.81	3.90	.65	3.97	.66
	Unemployed	3.59	.81	3.88	.71	3.94	.73
	Not in labour force	3.73	.78	3.97	.68	4.08	.68
2017	Employed	3.52	.82	3.87	.66	3.93	.68
	Unemployed	3.63	.82	3.89	.72	3.95	.74
	Not in labour force	3.73	.80	3.96	.67	4.08	.67

Note. GTS = Good Teaching Scale, GSS = Graduate Skills Scale, GQS = Graduate Qualities Scale.

For the GTS, there was an interaction effect, $F(4) = 3.23$, $MS = 2.15$, $p = .012$. There were higher mean levels of GTS for those not in the labour market, followed by the unemployed, and then the employed respondents. The interaction effect arose from mean levels for the employed respondents being relatively higher in 2015. Nonetheless, the effect size partial $eta^2 = .000$ renders the interaction effect practically meaningless. There was a significant interaction for GSS, $F(4) = 2.88$, $MS = 1.28$, $p = .021$. The interaction emerged from differences between the means of those not in the job market, whose means were higher than those were employed or unemployed. Again, the effect size partial $eta^2 = .000$ rendered the interaction practically meaningless. Similar results were found for the GQS. There was a significant interaction effect, $F(4) = 4.60$, $MS = 2.12$, $p = .00$, due to equivalent means between those employed and unemployed, but relatively higher for those who were not in the job market. Again, the effect size partial $eta^2 = .000$ indicates nothing practically meaningful. The findings of statistically significant interactions effects are due to the large sample size.

What matters most is that the zero effect sizes suggest that the differences are so marginally small as to be trivial and practically irrelevant. Thus, on the whole, there is no reason to suspect that the survey data were biased by labour market differences across the three years.

3.6.2 Measurement Models

First, we tested the correlated factor models which assume moderate correlations among three distinct factors; then we tested the bifactor models which assume a general factor mirrored by three separate factors. Table 6 shows the test statistics and fit indices for the measurement structures across both sets of models.

Table 6

Model Fit Statistics and Indices for the CFA Models of the CEQ Data

Model	χ^2	df	CFI	TLI	RMSEA	RMSEA 90% CI	MD χ^2 (df)
			Model Set 1a				
CF-CFA	22487.915***	132	.937	.927	.042	.042, .043	-
BF-CFA[b]	-	-	-	-	-	-	-
			Model Set 2a				
CF-CFA	21694.653***	134	.939	.931	.041	.041, .042	[c]828.983 (2)***
BF-CFA	11686.651***	117	.967	.957	.032	.032, .033	[d]10019.621 (17)***

Note. [a]Model Set 1 refers to models in which GQS and GSS are distinct factors whereas Model Set 2 refers to models in which GQS and GSS have been collapsed. [b] The Model 1 BF-CFA did not converge. [c] This comparison is between the Model Set 1 and Model Set 2 CF-CFA models. *** $p < .001$. [d] This comparison is between the Model Set 2 BF-CFA and CF-CFA models.

The three-factor CF-CFA provided an acceptable fit to the data; however, in this model, the correlation between the GSS and GQS factors was .989. Such a high correlation suggests the factors are dimensionally redundant (i.e., measuring the same construct). This finding tentatively supports specification of a revised models in which these two factors are combined into one. The BF-CFA of general factor and three specific factors did not produce

to an admissible solution. Given the very high correlation between the GQS and GSS, we combined these factors into one. The test of the CF-CFA model resulted in an acceptable fit to the data, and, notably, no appreciable degradation in fit relative to the three-factor CF-CFA, Model Set 1 (ΔCFI = +.002, ΔTLI = +.004, ΔRMSEA = -.001).

In the two-factor CF-CFA, the correlation between the GTS and new GSQS factors was strong (r = .772), which indicated the possibility of a general factor underlying responses to all items. Accordingly, we used bifactor modelling because a BF-CFA model can accommodate construct-relevant multidimensionality due to the presence of both general and specific factors underlying response data. The test of the Model Set 2 BF-CFA model resulted in an excellent fit to the data, and an appreciable improvement in fit relative to Model Set 2 CF-CFA model (ΔCFI = +.028, ΔTLI = +.026, ΔRMSEA = -.009).

In the BF-CFA model, the general factor was very well-defined with uniformly strong standardised loadings (see Table 7). The strength of the general factor is remarkable given that the items of the CEQ were intended to index three distinct factors. Beyond the general factor, the standardised loadings for GSQS factor were also mostly moderate to strong. For the GTS factor, three of the six standardised loadings exceeded a value of .15, with two exceeding .40, suggesting adequate specificity beyond the general factor. Given the superior fit of the Model Set 2 BF-CFA model, the well-defined general factor, and reasonably-well-defined specific factors, this model was retained for further analysis.

3.6.3 Prediction of Graduate Outcome Variables

To address the third aim of the research, we used the final BF-CFA model to test whether the CEQ subscales GTS and GSQS predicted graduates' employment status, further study, and course satisfaction outcomes. The overall model provided an excellent fit to the data, χ^2 (162) = 10077.496, $p < .001$, CFI = .976, TLI = .968, RMSEA = .024, 95% CI [.024, .025]. Figures 1, 2, and 3 show predicted probabilities of being employed, further

study, and being satisfied overall with the course with respect to the G-Factor, GTS, and GSQS. Specific probit regression coefficients are reported in the narrative hereafter.

Table 7

Completely Standardised Factor Loadings from the Retained BF-CFA Model

Item	G-factor	GTS S-Factor	GQS S-factor	h^2
GTS-01	.765	.454	–	.209
GTS-03	.795	.507	–	.112
GTS-10	.866	.101	–	.580
GTS-15	.854	-.034	–	.240
GTS-16	.858	-.027	–	.418
GTS-27	.778	.159	–	.378
GSS-06	.610	–	.219	.269
GSS-14	.651	–	.445	.263
GSS-23	.648	–	.515	.319
GSS-32	.569	–	.447	.315
GSS-42	.596	–	.615	.370
GSS-43	.567	–	.582	.440
GQS-11	.676	–	.355	.476
GQS-17	.733	–	.380	.306
GQS-30	.653	–	.365	.328
GQS-36	.627	–	.549	.267
GQS-40	.587	–	.573	.340
GQS-48	.589	–	.504	.399

Note. h^2 = model-based communality estimates. All loadings are statistically significant at $p < .001$, which is not unexpected given the very large sample.

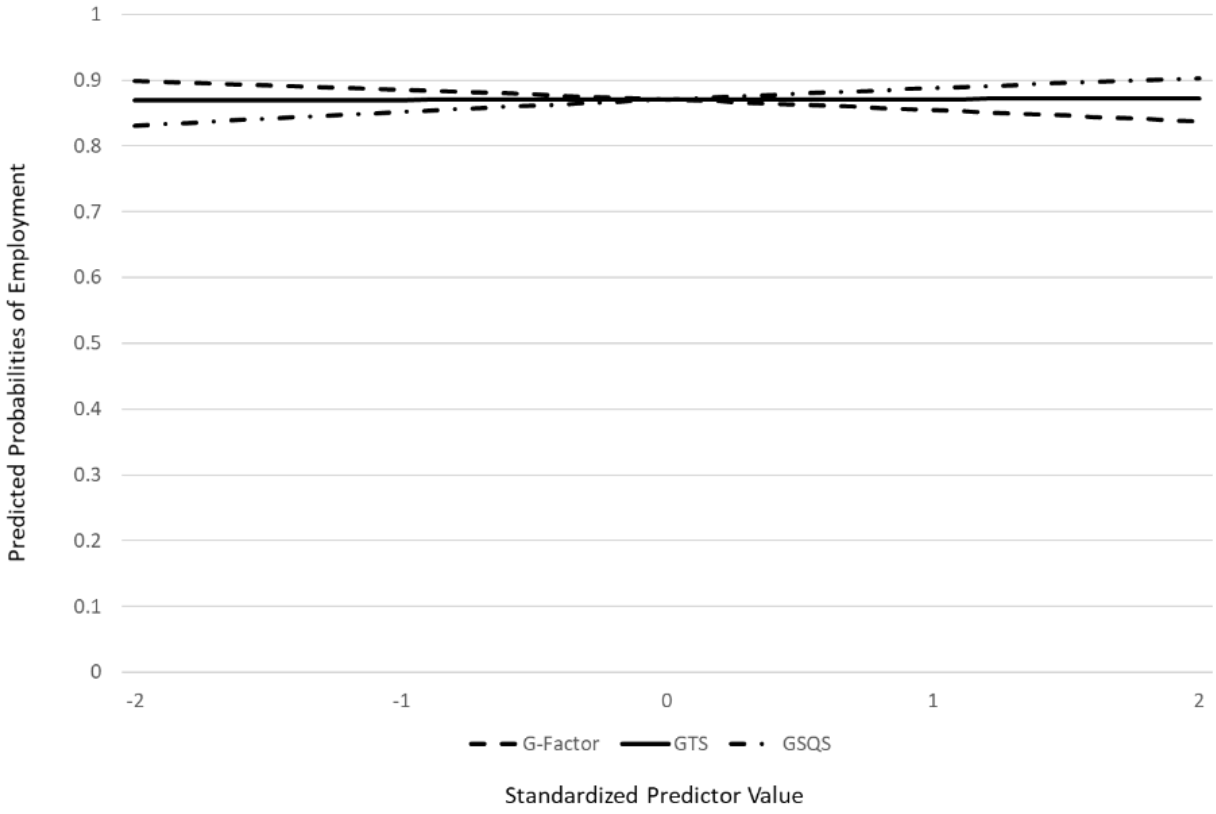
3.6.4 Relations Between CEQ Scales and Employment Outcomes

The G-Factor was negatively related to employment status ($\gamma = -0.073$, SE = .008, $p < .001$). Although statistically significant, this relation is practically negligible. Similarly, the relation between the combined GSQS factor and employment status was statistically significant ($\gamma = 0.086$, SE = .006, $p < .001$) but practically negligible. As shown in Figure 2, for increases in the G-factor from the mean to one standard deviation above the mean (+1SD), the predicted probability of employment (the closer the number is to 1, the more likely a graduate is to be employed) decreased from .871 to .855. For increases in the specific GSQS factor from the mean to +1SD, the predicted probability of employment increased

from .871 to .888. These results indicate that gains in graduates' perceptions of their skills and qualities is likely to only marginally increase the probability of employment. The GTS factor was not significantly related to employment status ($\gamma = 0.003$, SE = .008, $p > .05$).

Figure 2

Plot of Predicted Probabilities for Employment Status Across a Range of Values for the (Standardised) CEQ Latent Variables



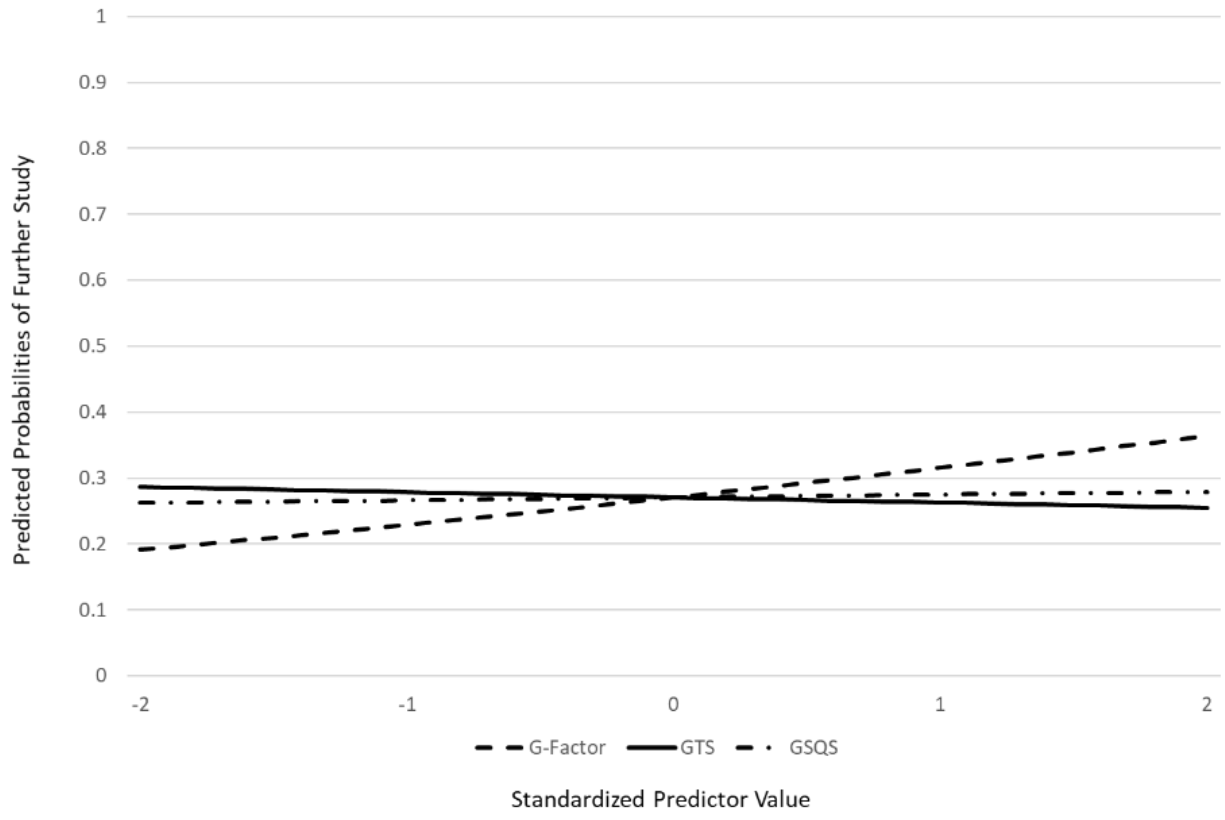
3.6.5 Relations Between CEQ Scales and Further Study

For further study, the G-factor was a significant and positive predictor ($\gamma = 0.131$, SE = .010, $p < .001$). For an increase in this factor from the mean to +1SD, the predicted probability of further study increased from .271 to .316 (see Figure 3). The specific GTS ($\gamma =$

-0.024, SE = .013, p > 05) and GSQS (γ = 0.013, SE = .011, p > 05) factors did not significantly predict further study.

Figure 3

Plot of Predicted Probabilities for Further Study Status Across a Range of Values for the (Standardised) CEQ Latent Variables



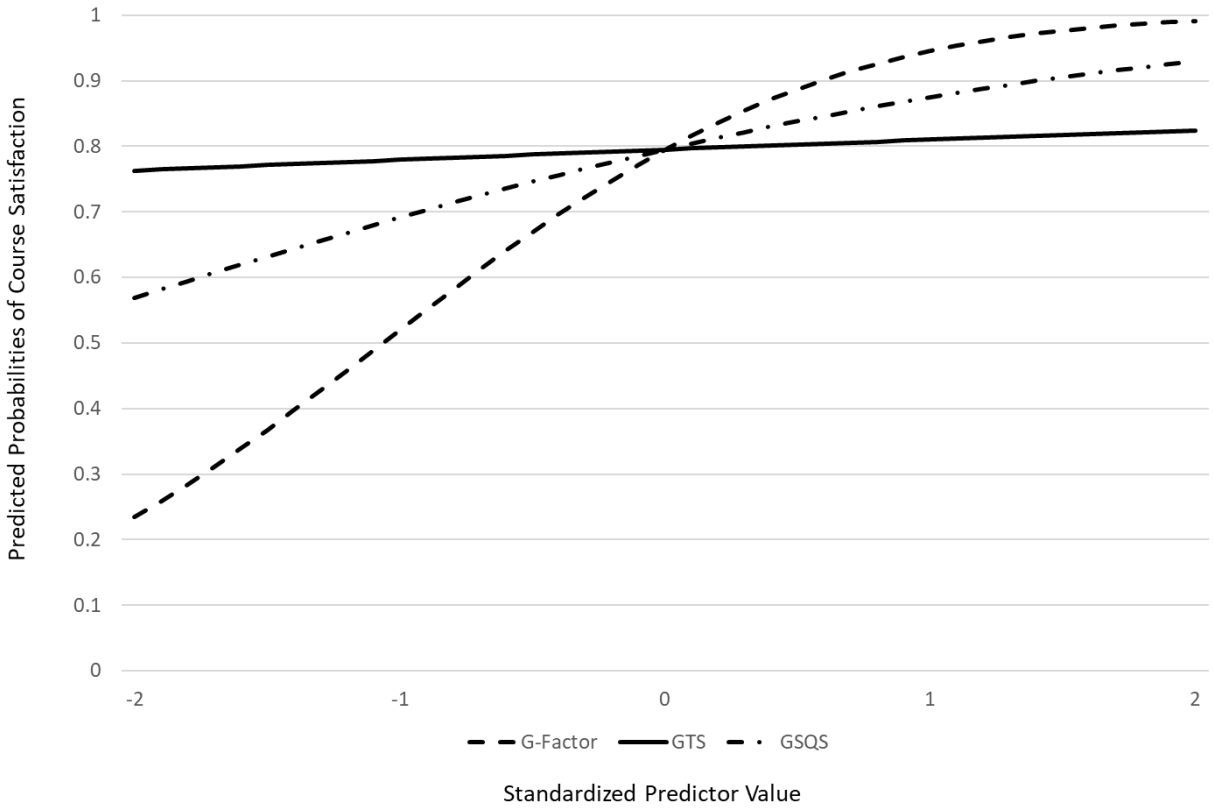
3.6.6 Relations Between CEQ Scales and Overall Satisfaction

The G-factor (γ = 0.775, SE = .004, p < .001) and specific GTS (γ = 0.054, SE = .007, p < .001) and GSQS (γ = 0.325, SE = .007, p < .001) factors were significantly predictive of course satisfaction. For increases in the G-factor from the mean to + 1SD, the predicted probability of overall satisfaction increased from .795 to .945. For increases in the specific GTS and GSQS factors from the mean to +1SD, the predicted probabilities of overall

satisfaction increases from .795 to .810 and from .795 to .874, respectively (see **Figure *4***). Ramsden (1991) found significant correlations between the CEQ scales and overall satisfaction, but insufficient statistical support for the CEQ scales to be used as a proxy for overall satisfaction. Our findings suggest that with this most recent collection of responses to the CEQ, the G-factor, in particular, and the GTS and GSQS scales to a lesser extent, are significant predictors of overall satisfaction.

Figure 4

Plot of Predicted Probabilities for Course Satisfaction Across a Range of Values for the (Standardised) CEQ Latent Variables



3.7 Discussion

The present research offers new findings about high-profile metrics currently used to appraise universities' performance, based on three consecutive years of national data. First, the CEQ (as measured by the general factor model) predicts graduates' overall satisfaction with their educational experience and enrolment in further study, which affirms the CEQ's utility as an indicator of graduates' satisfaction with teaching and skill development. Second, we found that the measures of graduate skills and qualities—GSS and GQS—are collinear and are better modelled as a combination measure of the same factor (i.e., GSQS). This is an important finding as other research has treated the skills and graduate qualities scales as measuring different variables that have distinct effects on employment outcomes (Jackson 2016, 2014). Third, and most importantly, the GSQS marginally predicts employment outcomes but at such a low level of likelihood that its practical utility effect is trivial. In other words, these measures of graduate skills and qualities are measuring something, but that something has little direct effect on graduates' chances of being employed.

Our findings challenge the commonly accepted link between students' perceived qualities and skills development, and employment outcomes. The negligible relations between graduate skills and qualities and employment outcomes highlights the need to further investigate other predictors of employment outcomes. Self-perceived employability (Rothwell et al. 2008; Rothwell et al. 2009), which includes perceptions of knowledge, skills, and confidence in job search processes, has been found to predict employment status and job quality (Okay-Somerville and Scholarios 2017), however, the authors found that career self-management was a more important predictor of employment status and quality. This points to other opportunities for higher education institutions to develop students' employability through embedding careers and employability learning in the curriculum (Brown et al. 2019; Bridgstock et al. 2019).

Our findings also highlight the imperative for higher education leaders to critically examine calls from industry and government that universities should focus on the development of graduate skills for employability purposes. As an academic community, we should critically scrutinise claims about direct relations between the development of relevant graduate attributes and employability skills, and the employment outcomes of graduates. Scholars have found that employers are more likely to hire graduates who have the required knowledge and technical skills foremost (Humburg and van der Velden 2015), whilst others view interpersonal qualities as more important (Dicker et al. 2018). In addition, Moore and Morton (2017) argue that it is not possible to systematically prepare students for the specific requirements they find themselves in as employers' requirements for the deployment of generic skills is highly contextualised.

The CEQ scales provide a valid measure of graduates' perceptions of the quality of teaching and development of skills and qualities. It is within the control of universities to implement strategies to improve teaching quality and make curricula changes to support students to develop generic skills. Indeed, universities over the past decade have invested in strategies to enhance student employability via embedding the teaching and assessing of graduate skills and attributes in the curriculum. Based on our findings, such efforts are likely to translate into higher graduate course satisfaction. However, attainment of learning outcomes is not the same thing as the achievement of employment outcomes. Yet current usage of these CEQ measures risks conflating graduate work-readiness, or the possession of skills and attributes, with graduate employability.

When it comes to improving the employment outcomes of graduates, the present findings are clear: there is a negligible relation between GSS and GQS scores and employment status (i.e., employed, unemployed or not in the job market). A key implication of the failure to find a predictive relation between the GSS, GQS and employment outcomes

is that these measures should not be touted as proxies for graduate employability. Although "higher education provides no guarantee of actual employment" (Nilsson 2017), other strategies within the agency of universities can be utilised to support graduate employment outcomes. For example, the inclusion of career development learning in the curriculum to increase students' career self-management skills (King 2004), initiatives that help students to develop social networks (Bridgstock 2019; Bridgstock and Jackson 2019), and through balancing the supply of enrolments in degree programs in anticipation of demand for qualifications in the labour market (Nilsson 2017).

Finally, our findings highlight significant methodological and ethical concerns with the planned use by the Australian Government of CEQ measures as key performance indicators for the tertiary sector. More specifically, the use of current measures of course experience to evaluate and reward high levels of institutional performance, or to provide this data to prospective students as a measure of quality employment outcomes for universities, in the absence of evidence, raises doubt about the use, perhaps misuse, of the GTS, GSS and GQS.

3.7.1 Limitations

A limitation to this study is the relatively short period of time after graduation which the survey is taken (i.e., four months), particularly given that 11.5% were unemployed and 11.4% were not in the labour market at the time of the survey. These graduates may have been searching for work that is substantively relevant to their qualification or dropped out of the labour market. Furthermore, a combined total of 38.5% reported that their qualification was "not at all important" or "not important" for their employment at the time of the survey. Thus, it is important to read the present findings with the caveat that the respondents may not have been in a personally suitable position. Moreover, the cross-sectional design means that it is not possible to identify causal pathways between variables. For example, it could be that

employed graduates are more satisfied with their course experience than unemployed graduates because they achieved a desirable outcome from their course.

3.7.2 Future Research

If GTS, GSS and GQS do not predict employment outcomes then what does? There is an emerging body of research into the psychosocial predictors of employment outcomes, based in the vocational psychology and organizational psychology literatures (Healy et al. 2020). Dispositional employability (Fugate et al. 2004; Fugate and Kinicki 2008) explores psychosocial capital (Koen et al. 2013; McArdle et al. 2007) that predicts employment-related behaviours and outcomes in graduates (González-Romá et al. 2018; Augustsson 2016; Lim et al. 2016). Research into the relations between psychosocial capital and employment outcomes would enhance stakeholders' understanding of what factors do and do not lead to employment outcomes.

GSS and GQS are self-assessment measures of graduates' self-perceptions of their skills and qualities, rather than measures of knowledge, skills, or other attributes sought by employers. Although the present findings indicate no substantive relation between GQS and GSS and graduates' actual employment outcomes, we note that the GSS and GQS have not been explored in relation to extant measures of graduates' self-perceived employability (Dacre Pool et al. 2014; Rothwell 2015). Based on Okay-Somerville and Scholarios (2017), a potential line of research would assess whether career adaptive behaviours mediate the relations between GSS, GQS and employment outcomes.

3.8 Conclusion

In many countries, employment outcomes for university graduates will no doubt persist as an important indicator of university education quality. There is, therefore, a pressing need for effective, transparent quality assurance measures that fairly assess related performance and progress of higher education institutions. The present findings provide an

appraisal of the validity of the CEQ and its application within QILT. Our findings are an informative contribution to debates about the conceptualisation and measurement of graduate employability—the CEQ subscales effectively do not predict graduates' employment status. These findings challenge university stakeholder discourse that conflates institutional performance against CEQ subscales with evidence of graduate employment outcomes and provide a platform for innovative thinking about employability by practitioners and policy leaders.

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CHAPTER 4: STUDY 2

Study 2 is principally concerned with validating the Dispositional Measure of Employability (DME) in a sample of Australian university students and recent graduates, and the utility of the DME to predict important variables related to employability including career adaptability and job search self-efficacy. The investigation is conducted across two studies. Study 2a conducts a principal factor analysis (PAF) of the DME scale and other measures to be used to test the hypotheses. Study 2b conducts confirmatory factor analysis (CFA) and hierarchical regression analyses to test relations between dispositional employability and measures of adaptability, adapting, and adaptation.

This study has been prepared for publication[2] and is currently under review. The pre-print version of the manuscript is presented next.

Brown, J.L., McIlveen, P., Hammer, S.J., & Perera, H.N. (2021). Relations between dispositional employability, career adaptability, job search self-efficacy, and career identity of university students. *Manuscript prepared for publication*.

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[2] There have been some modifications to the heading, figure, table, and page numbers to ensure the Thesis works as a whole document. There are variations in spelling due to the requirements of journals for using Australian, English, or American spelling conventions.

Relations Between Dispositional Employability, Career Adaptability, Job Search Self-Efficacy, and Career Identity of University Students

Dispositional employability can be understood as a psychosocial process that facilitates the enactment of behaviors directed toward career self-management. We argue that dispositional employability is conceptually similar to career construction theory's adaptivity component of the career adaptation model. This investigation aimed to test the validity of a measure of dispositional employability to predict salient career outcomes in two samples of university students and graduates. Across two studies, students at a multi-campus university in Australia completed an online survey containing measures of dispositional employability, career adaptability, and job search self-efficacy. Using SEM, our studies found that dispositional employability was significantly related to career adaptability and job search self-efficacy. Our findings inform recommendations for higher education institutions to measure the psychosocial aspects of employability and to develop educational initiatives that target students' engagement in adapting responses, such as career planning and career exploration activities.

Keywords: Dispositional employability, career adaptability, job search self-efficacy, university students, graduates

4.1 Introduction

Across the world, the return on investment of higher education qualifications for graduates is growing in importance. The term *employability,* widely used in the UK, Australia, and Europe, refers to individuals' capacity to obtain and maintain employment. The literature examining employability over past decades has concentrated on conceptual aspects of graduate employability, individual factors, and institutional-focused processes (Healy et al., 2020). However, there is a need to better understand the relations between employability and the career behaviors required to effectively deploy individuals' qualifications, skills, and knowledge in the employment market (Fugate et al., 2004). *Dispositional employability* is conceptualized as psychosocial resources that facilitate the enactment of proactive behaviors directed toward obtaining employment (Fugate & Kinicki, 2008; Fugate et al., 2004). The aim of the present research is to provide evidence of validity of a measure of dispositional employability (Fugate & Kinicki, 2008) for use with undergraduate university students, and to test its relations with salient career behaviors including career adaptability and job search self-efficacy.

4.2 Dispositional Employability

Dispositional employability is a multidimensional model which incorporates dimensions of career identity, personal adaptability, and social and human capital (Fugate et al., 2004). In an elaboration of the conceptualization of dispositional employability, Fugate and Kinicki (2008) proposed that individuals would exhibit a number of attributes that constitute employability. Specifically, individuals with higher levels of employability would be: (a) *open to change* or be positive about changes at work; (b) *resilient* through a sense of control over their career, generally optimistic about the future, and feel able to make valuable contributions at work; (c) *optimistic* about the future and the possibilities of opportunities; (d) *proactive* in seeking out information about future career opportunities; (e) exhibit *motivation*

directed toward career planning and career self-management; and (f) incorporate their work or career into their personal *identity*. Fugate and Kinicki indicate that these attributes are traits within the work and career domain, as distinct from broader trait of proactive personality, and are likely to foster proactive career behaviors.

In their meta-analysis of job search and employment, van Hooft et al. (2021) categorized several dispositional traits under the label "trait self-regulation", which included self-control, action orientation, proactive personality, learning goal orientation, and procrastination, as antecedents of job search process behavior. This broad category was used because there were insufficient studies into each trait to treat separately in the meta-analysis. They found trait self-regulation was associated with job search intensity (r_c = .22), job search quality (r_c = .22), employment status (r_c = .08), and employment quality (r_c = .19). The subscales of the DME are conceptually similar with some of these self-regulation traits (e.g., work and career proactivity and proactive personality; career motivation and learning goal orientation).

Research into dispositional employability has been advanced by development of the Dispositional Measure of Employability (DME; Fugate & Kinicki, 2008) but there is a limited amount of research into its measurement properties in different contexts. Dispositional employability has been found to predict emotions and affective commitment to organizational change (Fugate & Kinicki, 2008), job search intensity (McArdle et al., 2007; Tomas & Maslić Seršić, 2017), self-esteem and re-employment of unemployed workers (McArdle et al., 2007), engagement in professional development (Torrent-Sellens et al., 2016), and perceptions of future career prospects (Cerdin et al., 2020). Further research into dispositional employability is required to discern its relations with career adaptability, choice of job search methods, and other important career outcomes (Fugate & Kinicki, 2008). For

example, there is a need for a better understanding of how dispositional employability affects university students' engagement in career adaptive behaviors.

4.3 Career Adaptability

The notion *career adaptability* is variously defined in the literature of vocational psychology and career development. One conceptualization of career adaptability posits it as a psychosocial resource an individual utilizes to respond to vocational developmental tasks, occupational transitions, and work traumas (Savickas, 2005, 2013). Savickas describes four dimensions of career adaptability including concern, control, curiosity, and confidence. Another conceptualization of career adaptability references an orientation to the future, individual agency, occupational knowledge, optimism, and resilience (Park et al., 2019; Rottinghaus et al., 2012; Rottinghaus et al., 2005; Rottinghaus et al., 2017). Career adaptability resources are self-regulatory that have been found to positively relate to proactive career behavior (Spurk et al., 2020), self-perceived internal and external marketability (Spurk et al., 2016), career planning, career exploration (Rudolph, Lavigne, & Zacher, 2017), and self-efficacy (Matijaš & Maslić Seršić, 2021; McLennan et al., 2017). Although there are some conceptual similarities between dispositional employability and career adaptability in relation to supporting career behavior, dispositional employability "is more akin to traits that contribute to career adaptability" (Fugate & Kinicki, 2008, p. 509). Career adaptability is considered a transactional competency that is responsive to interventions and experiences (Rottinghaus & Eshelman, 2015; Rottinghaus et al., 2017; Rudolph, Lavigne, & Zacher, 2017; Savickas & Porfeli, 2012).

We hypothesize that dispositional employability will be positively related to career adaptability (Hypothesis 1).

4.4 Job Search Self-Efficacy

Job search self-efficacy (JSSE) is an individual's confidence in performing job search tasks (Tolentino et al., 2019; van Hooft et al., 2021) and is a predictor of job search behavior (Lim, Lent, et al., 2016), including search intensity, quality (van Hooft et al., 2021), and job search outcomes (Brown et al., 2006; Guan et al., 2014; Saks et al., 2015; van Hooft et al., 2021). Developing the self-efficacy to search for and apply for jobs, to receive feedback on performance, and to learn from the successes of peers is important for university students to successfully make the transition from study to work. Research has found support for several antecedents of self-efficacy, such as employability (Berntson et al., 2008), learning experiences (Lent et al., 2017), career adaptability (Matijaš & Maslić Seršić, 2021), and psychological capital (Pajic et al., 2018). Several scholars have identified multiple dimensions of JSSE that differentiate between confidence in job search behavior, outcomes of job search (Saks et al., 2015), and performance in job interviews (Matijaš & Maslić Seršić, 2021; Petruzziello et al., 2022). Saks et al. (2015) found that environmental- and self-exploration were stronger predictors of JSSE behavior, whereas career planning was a stronger predictor of JSSE outcomes.

We hypothesize that dispositional employability will be related to job search self-efficacy (Hypothesis 2).

4.5 Career Identity

Meijers (1998) defines career identity as an "I-structure" which is constructed by an individual through exploring and experiencing their environment. Career identity develops through the way in which these experiences are incorporated into the self-concept. Marcia (1966) examined career identity through the notion of ego-identity status. Representing a two-dimensional structure of exploration and commitment, four categories of career identity status include diffuse, moratorium, foreclosed, and achieved. Rottinghaus et al. (2005)

developed a categorical item, based on the Marcia conceptualization, to measure career identity status, which was found to explain differences in participants responses to the career futures inventory subscales of career adaptability, perceived knowledge, and career optimism. Praskova et al. (2015a) found positive relations between level of engagement in career exploration and planning, and clarity of career identity. In addition, clarity of career identity was positively related to higher levels of perceived employability and lower levels of career distress.

We hypothesize that dispositional employability, career adaptability, and job search self-efficacy will predict categories of career identity (Hypothesis 3).

4.6 The Present Investigation

The present research has two principal aims. The first is to determine the measurement properties of the DME (Fugate & Kinicki, 2008) in samples of Australian university students for which there are no published studies specifically addressing its properties. The findings of such research provide additional validity evidence and concomitantly ascertain the DME's utility for other demographic contexts. The second aim is to test relations between dispositional employability and salient career management behaviors, including career adaptability, job search self-efficacy, and career identity. The investigation was conducted across two phases with independent data sets. Study 2a used principal axis factoring (PAF) to initially determine the measurement properties of the DME and other measures that were to be used in Study 2b. Study 2b used confirmatory factor analysis (CFA) to test the measurement model, then hierarchical regression analyses and multinomial regression to test the hypotheses.

4.7 Study 2a: Exploratory Factor Analysis

4.7.1 Participants

The participants were students from a multi-campus university in Australia. Complete and valid responses were obtained from 751 students (638 female, 85.0%), aged 18 to 52 (M = 22.46 years, SD = 6.27). Most participants were studying an undergraduate degree (97.0%) and were enrolled in health science, humanities, and behavioral science courses (88.3%), which reflects the large proportion of female participants in this study, and the remainder of participants were enrolled in science, business and commerce, and law courses. As is common in Australia, most participants (78.4%) were engaged in the workforce in casual employment (i.e., not professional full-time employment).

4.7.2 Procedure

Participants were recruited through the careers service at the University of [masked for review]. Students were invited to complete an online survey. At the end of the survey, participants received a computer-generated report which contained a description of the measures in plain English and the participants' scores on each subscale. Participation was voluntary and participants had the right to withdraw from the study. The study was approved by the Human Research Ethics Committee of the University of [masked for review].

4.7.3 Measures

4.7.3.1 Dispositional Measure of Employability (DME)

The DME (Fugate & Kinicki, 2008) is a 25-item measure which includes six subscales aligned with its theoretical foundation. Sample items for each subscale: Openness to Changes at Work (e.g., "I would consider myself open to changes at work"), Work and Career Proactivity (e.g., "I stay abreast of developments in my industry"), Career Motivation (e.g., "I have a specific plan for achieving my career goals"), Work and Career Resilience (e.g., "I have control over my career opportunities"), Optimism at Work (e.g., "I always look

on the bright side of things at work"), and Work Identity (e.g., "I define myself by the work that I do"). The Work and Career Identity subscale was not included as its items (e.g., "It is important to me that others think highly of my job") were not relevant for this cohort of predominantly undergraduate students who were not in full-time professional employment. Respondents indicate their agreement with each item using a 5-point Likert-type scale (1 = *strongly disagree*, 5 = *strongly agree*). The score of each subscale is calculated by taking the mean of the items. In the present dataset, the DME subscales' internal consistency coefficients ranged from $\alpha = .71$ to $\alpha = .89$.

4.7.3.2 Job Search Self-Efficacy (JSSE)

The JSSE has two subscales: Outcomes and Behaviors (Saks et al., 2015) were used to measure the confidence of participants in obtaining job outcomes (e.g., item) and engaging in career adaptive behaviors (e.g., "Use social networks to obtain job leads"). Respondents indicate their confidence for each statement using a 5-point Likert-type scale (1 = *not at all confident*, 5 = *totally confident*). The score of each subscale is calculated by taking the mean of the items in the subscale. This measure has been used in a diverse range of samples, including refugees (Pajic et al., 2018) and people with disability (Cmar & McDonnall, 2019). In the present dataset, the JSSE subscales' internal consistency coefficients ranged from $\alpha = .81$ to $\alpha = .95$.

4.7.3.3 Career Futures Inventory-9 Item (CFI-9)

The CFI-9 (McIlveen et al., 2012) is a short-form version of the Career Futures Inventory (Rottinghaus et al., 2005) with three subscales: Career Adaptability, Perceived Knowledge, and Career Optimism. The CFI-9 has been tested in research and found to be a valid measure of career adaptability (McLennan et al., 2017; Spurk et al., 2020), and includes measures of knowledge, optimism, and agency that Fugate and Kinicki (2008) anticipated would be supported by dimensions of dispositional employability. All three subscales from

CFI-9 were selected for this study. Career Adaptability (CA) measures how an individual perceives their ability to cope with and adapt to work and career related changes (e.g., "I can adapt to change in the world of work"). Perceived Knowledge (PK) indicates how well individuals understand labor market information (e.g., "I am good at understanding job market trends"). Career Optimism (CO) measures individuals' tendency to expect the best to happen (e.g., "Thinking about my career inspires me"). Respondents indicate their agreement with each item using a 5-point Likert-type scale (1 = *strongly disagree*, 5 = *strongly agree*). The score of each subscale is calculated by taking the mean of the items in the subscale. In the present dataset, the JSSE subscales' internal consistency coefficients ranged from $\alpha = .75$ to $\alpha = .93$.

4.7.4 Data Analysis

There has been a variety of factor structures identified for the DME scale in other research (cf. Cerdin et al., 2020; Fugate & Kinicki, 2008; Tomas & Maslić Seršić, 2017); therefore principal axis factoring (PAF), using SPSS v27, was used to determine the factor structure using the present data collection. For consistency, PAF was also undertaken on the CFI-9 and JSSE scales. Factors were extracted with oblique rotation (direct oblimin) as the latent factors are expected to correlate. The extraction of factors was determined through analysis of the scree plot, Kaiser unity criterion, and the variance explained. Internal reliability was estimated using Cronbach alpha coefficients and the factor correlations were calculated.

4.7.5 Results

4.7.5.1 Data Screening

Data screening was conducted to remove aberrant cases. A total of 786 participants completed the full questionnaire. First, the time taken to complete the questionnaire was analyzed and responses that took under 3 minutes and greater than 60 minutes were removed,

leaving 761 participants. These times were selected to remove unconsidered responses and those that might have not been completed in one session. Although the survey link was promoted through the university's careers service, staff and recent graduates may have been able to access the survey. The responses of ten participants who were not enrolled students were removed. Responses from 751 participants were retained. The measures' means, standard deviations, Cronbach alpha coefficients of internal consistency, and correlations are presented in Table 8.

4.7.5.2 Factor Structure: Dispositional Measure of Employability

The Kaiser-Meyer-Olkin measure confirmed adequacy of the sample (KMO = .89) and the accepted five-factor solution explained 65.95% of the variance. The pattern matrix and item loadings are presented in Table 9. Initially, a four-factor solution with eigenvalues greater than one was identified, which explained 62% of the variance. Items corresponding with two subscales—Work and Career Resilience, and Career Motivation—loaded onto a single factor. As these two subscales correlated moderately in previous research (Fugate & Kinicki, 2008), the factor extraction was run again, specifying a five-factor structure. Although the eigenvalue for the fifth factor was less than one, the scree plot and plausibility of five distinct factors justify accepting this solution (Giordano et al., 2020). This five-factor solution replicates the factors identified in the Fugate and Kinicki (2008) exploratory factor analysis, minus the Work Identity subscale which was not included in the present study. However, one item ("My past career experiences have been generally positive"), was dropped due to not adequately loading on any factor (<.3). This item appears to not hold face validity for undergraduate university students, who are likely not to have had extensive past career experiences. The internal reliability of the subscales was acceptable (from $\alpha = .71$ to $\alpha = .88$); and there was no evidence of collinearity of any of the subscales ($r = .32$ to .56).

Table 8

Descriptive Statistics, Internal Reliability and Correlations Among Measures for Study 2a

Dispositional Measure of Employability (DME)							
Measures	*M*	*SD*	1	2	3	4	5
1. Work and Career Resilience	4.33	.60	**(.77)**				
2. Optimism at Work	3.77	.70	.493	**(.79)**			
3. Openness to Changes at Work	4.25	.53	.539	.453	**(.84)**		
4. Work and Career Proactivity	3.96	.74	.425	.386	.434	**(.89)**	
5. Career Motivation	3.92	.82	.551	.342	.345	.389	**(.71)**
Career Futures Inventory – 9 items (CFI-9)							
Measures	*M*	*SD*	1	2	3		
1. Career Adaptability	4.26	.61	**(.81)**				
2. Perceived Knowledge	3.07	.91	.309	**(.75)**			
3. Career Optimism	4.56	.70	.361	.225	**(.93)**		
Job Search Self-Efficacy (JSSE)							
Measures	*M*	*SD*	1	2	3		
1. JSSE Outcomes	3.81	.77	**(.95)**				
2. JSSE Behaviors Passive	4.21	.74	.594	**(.89)**			
3. JSSE Behaviors Active	3.38	.85	.577	.629	**(.81)**		

Note. The numbers in bold on the diagonal represent Cronbach alpha reliability estimates of internal consistency. All correlations are significant at $p < .01$

Table 9

Factor Loadings for the Dispositional Measure of Employability Scale

	Factors				
Items	WCR	OPN	PRO	OPT	MOT
WCR01	**.426**	-.010	-.044	.059	.365
WCR02	**.467**	.001	-.056	.226	.112
WCR03	**.447**	-.012	-.047	.089	.257
WCR04	.249	-.147	-.010	.162	.218
WCR05	**.302**	-.163	-.029	.275	.111
OPT01	.086	.034	-.059	**.623**	-.027
OPT02	-.025	-.101	.032	**.763**	.032
OPT03	-.021	-.006	-.080	**.770**	-.037
OPN01	.011	**-.362**	.004	.243	.102
OPN02	-.113	**-.828**	.041	.121	.042
OPN03	-.106	**-.803**	-.057	.002	.065
OPN04	.331	**-.568**	-.121	-.058	-.043
OPN05	.318	**-.596**	-.129	-.060	-.105
PRO01	.043	-.077	**-.767**	.011	-.024
PRO02	-.106	.055	**-.961**	.001	.053
PRO03	.005	.014	**-.813**	.032	.001
MOT01	.065	-.092	-.071	-.098	**.498**
MOT02	.048	-.006	.044	-.021	**.814**
MOT03	-.068	.053	-.093	.099	**.638**

Note. Extraction method: principal axis factoring. Rotation method: Oblimin with Kaiser Normalization. WCR = Work and Career Resilience; OPN = Openness to Change at Work; PRO = Work and Career Proactivity; OPT = Optimism at Work; MOT = Career Motivation. WCR04 was dropped due to loadings < .3.

4.7.5.3 Factor Structure: Job Search Self-Efficacy

The Kaiser-Meyer-Olkin measure confirmed adequacy of the sample (KMO = .95). A three-factor solution was identified with eigenvalues greater than 1 and in combination explained 68.05% of the variance. Table 10 presents the pattern matrix and item loadings on three factors, rather than the original two factors. The first factor contains all items of the JSSE Outcomes subscale reported in Saks et al. (2015). The next two factors include items from the JSSE Behaviors subscale. On closer inspection, the second factor includes items related to passive job search behaviors (e.g., "*Prepare resumes that will get you job interview*"), whereas the third factor contains items requiring active job search behaviors (e.g., "*Use social networks to obtain job leads*"). This distinction between active and passive behavior is consistent with other conceptualizations of job search behavior (e.g., preparatory v. active; van Hooft et al., 2021). Two items were dropped due to cross-loadings with similar magnitudes. The first item "Impress interviewers during employment interviews" loaded on JSSE Outcomes ($\lambda = .357$) and JSSE Active Behavior ($\lambda = .349$). The second item "Plan and organize a weekly job search schedule" loaded on JSSE Active Behavior ($\lambda = .309$) and JSSE Passive Behavior ($\lambda = .340$). The internal reliability of the scales was acceptable (from $\alpha = .80$ to $\alpha = .95$) and the correlation between subscales ranged from .58 to .63, indicating that the subscales are not collinear.

Table 10

Factor Loadings for the Job Search Self-Efficacy Scale

	Factors		
Items	JSSE Outcomes	JSSE Behavior Passive	JSSE Behavior Active
JSSE_1	**.795**	-.011	-.016
JSSE_2	**.840**	.029	-.063
JSSE_3	**.788**	.050	-.041
JSSE_4	**.873**	-.023	-.018
JSSE_5	**.878**	-.005	-.013
JSSE_6	**.727**	-.039	.042
JSSE_7	**.729**	-.031	.039
JSSE_8	**.860**	-.011	.008
JSSE_9	**.770**	-.012	.095
JSSE_10	**.832**	.059	-.042
JSSE_11	.224	.148	**.338**
JSSE_12	.211	**.374**	.230
JSSE_13	**.357**	.118	**.349**
JSSE_14	-.015	-.087	**.800**
JSSE_15	.005	.134	**.686**
JSSE_16	-.001	.034	**.798**
JSSE_17	.072	**.340**	**.309**
JSSE_18	-.039	**.873**	.035
JSSE_19	-.046	**.964**	-.036
JSSE_20	.098	**.858**	-.026

Note. Extraction Method: Principal Axis Factoring. Rotation Method: Oblimin with Kaiser Normalization. JSSE_13 and JSSE_17 were dropped due to cross loadings.

4.7.5.4 Factor Structure: Career Futures Inventory-9 Item (CFI-9)

The Kaiser-Meyer-Olkin measure confirmed adequacy of the sample (KMO = .76). The principal axis factoring had to be limited to three iterations to produce a pattern matrix. As these items have been derived empirically (McIlveen et al., 2012; Rottinghaus et al., 2012; Spurk et al., 2020) it is acceptable to use a small number of iterations (Watkins, 2018). A three-factor solution was identified with eigenvalues greater than 1 and in combination explained 76.42% of the variance. The items loaded on the same three factors found in previous research (McIlveen et al., 2012). The pattern matrix and item loadings are presented in Table 11. The internal reliability of the scales was acceptable (from α = .75 to α = .93) and the subscales were moderately correlated (.23 to .37) indicating that the subscales are not collinear.

Table 11

Factor Loadings for Career Futures Inventory (9 item) Scale

	Factors		
Items	Career Optimism	Perceived Knowledge	Career Adaptability
CA2	-.025	-.029	**-.768**
CA5	-.003	-.050	**-.900**
CA6	.041	.111	**-.612**
CO1	**.897**	-.050	-.017
CO2	**.934**	.028	.018
CO7	**.866**	.020	.003
PK1	-.013	**.892**	-.056
PK3	.082	**.643**	-.047
PK2_R	-.040	**.610**	.049

Note. Extraction Method: Principal Axis Factoring. Rotation Method: Oblimin with Kaiser Normalization.

4.7.6 Summary

In summary, the factor structures of the DME (without the subscale Work Identity) and CFI-9 were recovered from the data. Instead of two factors, the JSSE presented three: outcomes, passive behavior, and active behavior. We tested these models again using an independent data set in the hypothesis testing phase of the study.

4.8 Study 2b: Confirmatory Factor Analysis and Hypothesis Testing

4.8.1 Participants

The participants (N = 719) were students enrolled at the same university as reported in 4.7.1. The participants' demographic indicators were broadly similar to those in exploratory factor analysis phase and are as follows: participants were aged 18 to 57 (M = 21.6 years, SD = 5.5), 565 were female (78.6%), studying an undergraduate program (95.5%), and the majority (79.2%) were engaged in the workforce.

4.8.2 Procedure

This study followed the same procedure as reported in the exploratory factor analysis phase (see 4.7.2), with participants recruited from the university's careers service during the second semester of the 2020 academic year.

4.8.3 Measures

The measures included the five subscales of the DME (Fugate & Kinicki, 2008): Work and Career Resilience, Openness to Change at Work, Career Proactivity, Career Optimism, and Career Motivation; the CFI-9 (McIlveen et al., 2012) and the JSSE (Saks et al., 2015). These measures were described in detail in 4.7.3. In addition, a categorical indicator of career identity (Rottinghaus et al., 2005) based on Marcia's (1966) notion of ego-identity status, was included as a measure. The categorical item asks participants to select one option from four descriptors of career identity that best describes their status. The words in

italics summarize the category and are referred to in the results and discussion. The four categories are as follows:

1. *Diffuse Identity*: I have not made a career choice at this time, and I do not feel particularly concerned or worried about it.
2. *Moratorium Identity*: I have not made a career decision at this time, and I am concerned about it. I would like to make a decision.
3. *Foreclosed Identity*: I have chosen a career and although I have not investigated it or other career alternatives thoroughly, I think I would like it.
4. *Achieved Identity*: I have investigated a number of careers and have selected one. I know quite a lot about this career, including the kinds of training or education required and the outlook for jobs in the future. (Rottinghaus et al., 2005, p. 8).

4.8.4 Data Analysis

First, a Confirmatory Factor Analysis (CFA) was deployed using a maximum likelihood estimator in AMOS v.27 to estimate the fit to the data for a measurement model. Fit indices were calculated using the "model fit measures" plugin (Gaskin & Lim, 2016) and the cutoff criteria for an excellent fit were CFI ≥ .95, TLI ≥ .95, RMSEA < .08, and SRMR <.08 (Hu & Bentler, 1999; Schreiber et al., 2006). Second, hierarchical regression analyses were used to test relations between the DME subscales as predictor variables, and the CFI-9 and JSSE subscales as criterion variables. Third, a multinomial regression analysis was used to determine if the measures of dispositional employability, career adaptability, and job search self-efficacy could predict career identity categories.

4.8.5 Results

A total of 761 participants completed the full questionnaire. Data screening was conducted to remove aberrant cases. First, the time taken to complete the questionnaire was analyzed and responses that took under 3 minutes and greater than 60 minutes were removed,

leaving 728 responses. These times were selected to remove unconsidered responses and those that might have not been completed in one session. Although the survey link was on the university's Learning Management System, staff and recent graduates may have been able to access the survey. Responses from a small number of participants who indicated a non-student status were removed. In total, 719 responses were retained. The means, standard deviation, internal consistency, and correlations for the measures were calculated and presented in Table 12.

4.8.5.1 Confirmatory Factor Analysis

A CFA correlated factors model was used to test the factor structures of the DME, CFI-9, and JSSE identified in the exploratory factor analysis phase of the present research. The categorical career identity item was not included in the CFA. The DME contained latent factors representing Work and Career Resilience, Work and Career Proactivity, Openness to Change at Work, Optimism at Work, and Career Motivation. The CFI-9 contained latent factors representing Career Adaptability, Career Optimism, and Perceived Knowledge. The JSSE contained latent factors representing JSSE Outcomes, JSSE Passive Behavior, and JSSE Active Behavior. This model was found to be an acceptable fit to the data χ^2 (887) = 2029.34, $p < .001$, CFI = .943, TLI = .936, RMSEA = .042, 90% CI [.040, .045], SRMR = .052. All factor loadings were significant at $p < .001$ and latent factor correlations ranged from $r = .31$ to $r = .73$. Thus, the measurement models confirmed the findings of Study 2a.

4.8.5.2 Relations between Dispositional Employability, Career Adaptability, and Job Search Self-Efficacy

Two types of regression analyses were conducted to discern evidence of validity for the DME. First, the subscales of the DME were tested as predictors of the criterion variables Career Adaptability, Perceived Knowledge, and Career Optimism. Table 13 displays the

results of the regression models for dispositional employability with the three career adaptability subscales.

Table 12

Descriptive Statistics, Internal Reliability and Correlations Among Measures for Study 2b (N = 719)

Measures	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11
1. DME WCR	4.35	.57	**(.75)**										
2. DME OPT	3.82	.69	.534	**(.76)**									
3. DME OPN	4.22	.53	.497	.514	**(.83)**								
4. DME PRO	3.92	.74	.465	.407	.469	**(.90)**							
5. DME MOT	3.83	.80	.457	.406	.369	.382	**(.73)**						
6. CFI-9 CA	3.81	.72	.505	.465	.566	.419	.400	**(.83)**					
7. CFI-9 PK	3.52	.75	.265	.312	.261	.300	.334	.305	**(.72)**				
8. CFI-9 CO	4.19	.68	.561	.417	.440	.364	.477	.473	.291	**(.92)**			
9. JSSE O	4.21	.63	.575	.420	.430	.426	.475	.430	.382	.462	**(.94)**		
10. JSSE B-A	3.14	.85	.484	.384	.350	.430	.440	.433	.377	.394	.631	**(.77)**	
11. JSSE B-P	4.53	.67	.520	.413	.446	.442	.468	.520	.334	.464	.607	.584	**(.88)**

Note. The numbers in bold on the diagonal represent Cronbach alpha reliability estimates of internal consistency. All correlations are significant at $p < .01$. DME = Dispositional Measure of Employability subscales: DME WCR = Work and Career Resilience; DME OPN = Openness to Change at Work; DME PRO = Work and Career Proactivity; DME OPT = Optimism at Work; DME MOT = Career Motivation. CFI-9 = Career Futures Inventory-9 subscales: CA = Career Adaptability; PK = Perceived Knowledge; CO = Career Optimism. JSSE = Job Search Self-Efficacy subscales: JSSE O = Outcomes; JSSE B-A = Active Behavior; B-P = Passive Behavior.

Table 13

Regression Analysis of DME subscales on CFI-9 Career Adaptability, Perceived Knowledge, and Career Optimism

	CFI-9 Career Adaptability					CFI-9 Perceived Knowledge					CFI-9 Career Optimism				
Variable	β	*t*	R^2	ΔR^2	*p*	β	*t*	R^2	ΔR^2	*p*	β	*t*	R^2	ΔR^2	*p*
Step 1			.01					.01					.01		
Age	.08	2.27			.023	.08	2.12			.034	.03	.77			.441
Gender	.05	1.40			.163	-.06	-1.61			.109	.08	2.25			.025
Step 2			.42	.41				.18	.17				.40	.39	
Age	.06	1.92			.055	.04	1.16			.245	.00	.08			.935
Gender	.01	.23			.819	-.08	-2.41			.016	.04	1.35			.178
DME WCR	.20	5.28			.000	.02	.48			.628	.34	8.81			.000
DME OPT	.10	2.77			.006	.14	3.11			.002	.05	1.45			.148
DME OPN	.33	9.12			.000	.05	1.19			.233	.14	3.75			.000
DME PRO	.09	2.68			.008	.14	3.31			.001	.03	.89			.371
DME MOT	.10	3.01			.003	.19	4.83			.000	.23	6.82			.000

Note. DME = Dispositional Measure of Employability subscales: DME WCR = Work and Career Resilience; DME OPN = Openness to Change at Work; DME PRO = Work and Career Proactivity; DME OPT = Optimism at Work; DME MOT = Career Motivation.

Table 14

Regression Analysis of DME Subscales on JSSE Outcomes, JSSE Active Behavior, and JSSE Passive Behavior

	JSSE Outcomes					JSSE Active Behavior					JSSE Passive Behavior				
Variable	β	*t*	R^2	ΔR^2	*p*	β	*t*	R^2	ΔR^2	*p*	β	*t*	R^2	ΔR^2	*p*
Step 1			.00					.01					.01		
Age	.01	.13			.896	-.07	-1.93			.054	-.08	-2.17			.031
Gender	-.02	-.47			.639	-.03	-.68			.493	.06	1.50			.135
Step 2			.42	.42				.35	.34				.40	.39	
Age	-.02	-.83			.405	-.11	-3.61			.000	-.12	-4.03			.000
Gender	-.06	-2.18			.029	-.06	-2.05			.041	.01	.44			.658
DME WCR	.35	9.25			.000	.23	5.82			.000	.24	6.13			.000
DME OPT	.04	1.22			.224	.08	2.18			.030	.06	1.74			.083
DME OPN	.10	2.86			.004	.02	.48			.629	.13	3.55			.000
DME PRO	.11	3.20			.001	.20	5.41			.000	.16	4.65			.000
DME MOT	.22	6.43			.000	.22	6.29			.000	.23	6.77			.000

Note. DME = Dispositional Measure of Employability subscales: WCR = Work and Career Resilience; OPN = Openness to Change at Work; PRO = Work and Career Proactivity; OPT = Optimism at Work; MOT = Career Motivation.

As hypothesized, regression analysis revealed significant relations between dispositional employability and each of the career adaptability subscales. The first hierarchical regression used Career Adaptability as the criterion variable. Age (β = .08, p = .023), but not gender, was positively related to Career Adaptability $F(2, 711) = 3.45$, p = .032; however, it only accounted for 1% of the explained variance. The DME subscales were then entered into the regression and all five subscales were positively and significantly related to Career Adaptability $F(7, 706) = 74.20$, $p < .001$. The variance explained increased to 42%. With the addition of the DME subscales, age was no longer significantly related to Career Adaptability (β = .06, p = .055).

The second hierarchical regression used Perceived Knowledge as the criterion variable. Age (β = .08, p = .034), but not gender, was positively related to Perceived Knowledge $F(2, 711) = 3.67$, p = .026; however, age merely accounted for 1% of the explained variance. The DME subscales were then entered into the regression and three subscales—Optimism at Work (β = .14, p = .002), Work and Career Proactivity (β = .14, p = .001), and Career Motivation (β = .19, $p < .001$)—were positively and significantly related to Perceived Knowledge $F(7, 706) = 21.71$, $p < .001$. The variance explained increased to 18%. With the addition of the DME subscales, age was no longer significantly related to Perceived Knowledge; however, gender was related (β = -.08, p = .016), thus indicating that males rated Perceived Knowledge higher than did females.

The third hierarchical regression conducted was on Career Optimism as the criterion variable. Age and gender were not related to Career Optimism $F(2, 711) = 2.76$, p = .064. The demographic variables accounted for 1% of the explained variance. The DME subscales were then entered into the regression and three subscales—Work and Career Resilience, Openness to Change at Work, and Career Motivation—were positively and significantly related to

Career Optimism $F(7, 706) = 67.81$, $p < .001$. The variance explained increased to 40%. Optimism at Work was not significantly related to Career Optimism ($\beta = .05$, $p = .148$).

Next, a hierarchical regression analyses containing independent variables of demographics (age and gender), dispositional employability subscales, and career adaptability subscales, were tested against the dependent variables of the three job-search self-efficacy subscales. Table 14 displays the hierarchical regression results. The first hierarchical regression conducted was on JSSE Outcomes as the criterion variable. Age and gender were not significantly related to JSSE Outcomes, $F(2, 711) = .121$, $p = .886$. Next, the DME subscales were entered, which increased the explained variance to 42%, $F(7, 706) = 72.56$, $p < .001$. The Work and Career Resilience subscale held the strongest relations with JSSE Outcomes, ($\beta = .35$, $p < .001$), followed by Career Motivation ($\beta = .22$, $p < .001$), Work and Career Proactivity ($\beta = .11$, $p = .001$), and Openness to Change at Work ($\beta = .10$, $p = .004$). The relations between Optimism at Work and JSSE Outcomes was not significant ($\beta = .04$, $p = .224$).

The second hierarchical regression conducted was on JSSE Active Behavior as the criterion variable. The demographic variables (age and gender) were not significantly related to JSSE Active Behavior, $F(2, 711) = .2.05$, $p = .129$ and contributed 1% of the explained variance. Next, the DME subscales were entered, which increased the explained variance to 35%, $F(7, 706) = 53.76$, $p < .001$. Four DME subscales were positively and significantly related with JSSE Active Behavior—Work and Career Resilience ($\beta = .23$, $p < .001$), Optimism at Work ($\beta = .08$, $p = .030$), Work and Career Proactivity ($\beta = .20$, $p = .001$), and Career Motivation ($\beta = .22$, $p < .001$). The relations between Openness to Change at Work and JSSE Active Behavior was not significant ($\beta = .02$, $p = .629$). With the addition of the DME subscales, age became negatively associated with JSSE Active Behavior ($\beta = -.11$, p

= .001), and males indicated higher confidence in JSSE Active Behaviors than did females (β = -.06, p = .041).

The third hierarchical regression conducted was on JSSE Passive Behavior as the criterion variable. The demographic variables (age and gender) were entered and were found to be significantly related to JSSE Passive Behavior, $F(2, 711) = 3.56$, p = .028 and contributed 1% of the explained variance. Next, the DME subscales were entered, which increased the explained variance to 40%, $F(7, 706) = 67.95$, $p < .001$. Four DME subscales were positively and significantly related with JSSE Active Behavior—Work and Career Resilience (β = .24, $p < .001$), Openness to Change at Work (β = .13, $p < .001$), Work and Career Proactivity (β = .16, $p < .001$), and Career Motivation (β = .23, $p < .001$). The relations between Optimism at Work and JSSE Passive Behavior was not significant (β = .06, p = .083). With the addition of the DME subscales, age became negatively associated with JSSE Passive Behavior (β = -.12, $p < .001$).

4.8.5.3 Predictors of Career Identity

Previous research has found that measures of career adaptability were significantly related to career identity status (Rottinghaus et al., 2005). To further investigate the predictors of career identity status, multinomial logistic regression was used to determine if the scores on the measures of dispositional employability, career adaptability, and job search self-efficacy could predict membership of the four categories of career identity. Career identity categories were compared in reference to the fourth category of achieved identity. The results of the regression model are reported in Table 8. For the first category, the odds ratio indicates that those with a diffuse career identity were more likely to have a lower score on DME Career Motivation (*OR* = .28) and CFI-9 Career Optimism (*OR* = .25), and a higher score on CFI-9 Career Adaptability (*OR* = 3.41). For the second category, the odds ratio indicates that those who nominated a moratorium career identity were more likely to have a lower score on

DME Career Motivation (*OR* = .28), JSSE Outcomes (*OR* = .33), and CFI-9 Career Optimism (*OR* = .19), and a higher score on DME Openness to Change at Work (*OR* = 2.81). For the third category, the odds ratio indicates that those who nominated a foreclosed career identity were more likely to have a lower score on DME Career Motivation (*OR* = .56), CFI-9 Perceived Knowledge (*OR* = .71), and CFI-9 Career Optimism (*OR* = .57).

Table 15

Multinomial Regression Model Coefficients for Measures Predicting Career Identity Status

Career Identity[a]	Measures	*B*	SE	95% CI for Odds Ratio Lower	Odds Ratio	Upper
1	Intercept	1.75	1.57			
	DME WCR	.54	.45	.72	1.72	4.12
	DME OPT	.22	.33	.65	1.25	2.37
	DME OPN	.22	.44	.53	1.24	2.93
	DME PRO	-.37	.28	.40	.69	1.20
	DME MOT	-1.28	.27***	.16	.28	.47
	JSSE O	.38	.37	.70	1.46	3.04
	JSSE B-A	.28	.33	.70	1.33	2.55
	JSSE B-P	-.48	.35	.31	.62	1.22
	CFI-9 CA	1.23	.38***	1.60	3.41	7.26
	CFI-9 PK	-.42	.23	.42	.66	1.04
	CFI-9 CO	-1.41	.32***	.13	.25	.46
2	Intercept	3.66	1.50*			
	DME WCR	.42	.38	.72	1.52	3.23
	DME OPT	.38	.30	.81	1.46	2.62
	DME OPN	1.03	.43*	1.20	2.81	6.58
	DME PRO	-.12	.26	.53	.88	1.48
	DME MOT	-1.28	.27***	.16	.28	.47
	JSSE O	-1.10	.32***	.18	.33	.63
	JSSE B-A	-.39	.31	.37	.68	1.23
	JSSE B-P	.37	.33	.75	1.44	2.76
	CFI-9 CA	.64	.35	.95	1.90	3.80
	CFI-9 PK	.07	.23	.69	1.07	1.67
	CFI-9 CO	-1.66	.30***	.11	.19	.34
3	Intercept	4.03	.90***			
	DME WCR	.22	.23	.79	1.24	1.94
	DME OPT	.04	.17	.75	1.04	1.44
	DME OPN	.13	.22	.74	1.14	1.76
	DME PRO	-.18	.15	.62	.83	1.11
	DME MOT	-.58	.14***	.43	.56	.74
	JSSE O	.12	.19	.78	1.12	1.62
	JSSE B-A	-.06	.16	.69	.94	1.30
	JSSE B-P	-.13	.19	.61	.88	1.26
	CFI-9 CA	.19	.19	.84	1.21	1.76
	CFI-9 PK	-.34	.12***	.57	.71	.90
	CFI-9 CO	-.56	.19***	.39	.57	.83

Note. Pseudo R^2 = .26 (Cox and Snell) .29 (Nagelkerke) .14 (McFadden). Model $\chi^2(33)$ = 216.06, $p < .001$. DME = Dispositional Measure of Employability; CFI-9 = Career Futures Inventory-9; JSSE = Job Search Self-Efficacy. $^{*}p < .05$ $^{**}p < .01$ $^{***}p < .001$. [a]Reference category is 4 (decided/committed career identity).

4.9 Discussion

The present research provides new validity evidence for DME as a measure of the multidimensional latent construct dispositional employability. With minimal differences from the original measure (Fugate & Kinicki, 2008), we recovered DME's factor structure in two distinct sets of data. These findings are based on data from a sample of participants for whom there are no published studies of the DME's measurement properties; thus, we provide evidence that the DME generalized to a context different from its original validation sample. Furthermore, the DME has distinctive relations with measures of career adaptability, job search self-efficacy, and career identity. These findings support the argument by Fugate et al. (2004) that dispositional employability is a psychosocial process that indicates individual's readiness to enact proactive career behaviors.

The present investigation also provides support for the conceptualization of the DME subscales. Fugate and Kinicki (2008) proposed that individuals who scored high on Work and Career Resilience would have a sense of control over their career; their Optimism at Work would relate to awareness of opportunities and to view career changes as an opportunity to learn; Openness to Change at Work would be adaptable to changing environments; their Work and Career Proactivity would foster seeking information to identify and realize career opportunities; and their Career Motivation would demonstrate a learning orientation and engagement in career planning. The significant relations between the DME subscales, particularly resilience, motivation, and optimism, and measures of career adaptability, perceived knowledge, career optimism, and job search self-efficacy behaviors and outcomes, provides new evidence to support these conceptualizations.

Fugate and Kinicki (2008) accepted a factor structure in which the Optimism at Work and the Work and Career Resilience subscales (identified initially in an exploratory factor analysis) were combined into one factor. Our findings indicate that the two subscales are

independent and held different relations with the CFI-9 and JSSE subscales. Work and Career Resilience was positively related to Career Adaptability and Career Optimism and all three JSSE subscales.

Optimism at Work was positively related to JSSE Active Behavior, CFI-9 Perceived Knowledge and CFI-9 Career Adaptability and supports the conceptualization of this dimension by Fugate and Kinicki (2008). The lack of relations between the DME Optimism at Work and the CFI-9 Career Optimism subscales was somewhat surprising, particularly as the two factors were moderately correlated (r = .417). A possible explanation is that the two subscales are measuring different aspects of optimism. The items in the Optimism at Work subscale are generalized positive statements (e.g., "I am a believer that 'every cloud has a silver lining' at work"), whereas the Career Optimism scale items assess career-specific future orientations (e.g., "I am eager to pursue my career dreams"). Luthans and Youssef-Morgan (2017) argue that optimism includes both a generalized positive outlook and an explanatory attribution style that attributes positive events to internal factors. Nonetheless, we note other research (McLennan et al., 2017; Tolentino et al., 2014) has found positive relations between career optimism and career adaptability using the full optimism scale from the career futures inventory (Rottinghaus et al., 2005) and the career adapt-abilities scale (Porfeli & Savickas, 2012), which is reason for further research to discern the measures' differential properties as indicators of optimism as a disposition or attributional style.

Next, we discuss the findings pertaining to the dimensionality of the JSSE measure in which we identified three factors. The first factor replicated the Saks et al. (2015) JSSE Outcomes subscale. The other two factors included items from the JSSE Behaviors subscale, which we have labelled as representing active and passive job search behaviors. The passive behavior factor represents job search behaviors that may be performed without interpersonal interactions in the labor market. The active behavior factor utilizes more social aspects of the

job search process, such using social networks to identify opportunities. This is consistent with prior research which distinguished between preparatory and active job search behavior (van Hooft et al., 2021). Other research has identified distinctions between confidence in job search and interview performance (Matijaš & Maslić Seršić, 2021). As the job search process involves a number of stages, such as preparation, search, application, and performance in assessment activities and interviews, it is important to continue to develop instruments that can distinguish individual's confidence in each aspect of the job search process. Therefore, the use of a three-factor structure for job search self-efficacy may be useful in future research to explore different job search behaviors.

We examined the factors predicting membership of the four categories of career identity status. The first three categories—diffuse, moratorium, and foreclosed—were compared against the achieved career identity status. Low odds ratios for Career Motivation and Career Optimism were present in all three profiles. This is consistent with past research that has found that career optimism supports achievement of career identity (Eva et al., 2020) and Fugate and Kinicki's (2008) assertion that individuals with high levels of career motivation tend to make career plans and engage in career planning activities. In addition, those with a diffuse career identity had higher odds ratio for Career Adaptability, indicating that although they have not engaged much in career planning, they believe they have agency over their career and perhaps will be able to make a career decision when required. This finding is inconsistent with those of Rottinghaus et al. (2005). The moratorium career identity profile indicates that students with this profile also had lower confidence in achieving job search outcomes and were more open to change, reflecting a desire to make a career decision. Those with a foreclosed career identity had a lower odds ratio for Perceived Knowledge, Career Motivation, and Career Optimism. This profile indicates a general lack of engagement in career exploration and career planning. Our findings provide new evidence of the

predictors of career identity status to include DME's Career Motivation subscale and JSSE Outcomes.

4.9.1 Limitations and Directions for Future Research

As a cross-sectional design, the present investigation has limitations in testing the direction of relations between variables; however, our findings are consistent with the meta-analysis of career adaptability research (Rudolph, Lavigne, Katz, et al., 2017). In addition, other research indicates that stronger relations between job search self-efficacy and outcomes occur in cross-sectional research designs in comparison to longitudinal designs (Kim et al., 2019), hence further investigations applying a longitudinal research design will improve the testing of relations between dispositional employability and components of the career adaptation model.

Universities use proxy measures of employability (e.g., satisfaction with graduate skill and teaching); however, measures of graduates' satisfaction with their learning experiences are inadequate predictors of graduates' employment outcomes (Brown et al., 2021). Indeed, van Hooft et al. (2021) argues that psychological factors are theoretically important in the pursuit of employment. Future research should extend the present findings of this research to examine potential mediational relations among dispositional employability, career adaptability, adapting responses (such as those encouraged through university employability strategies such as work integrated learning), and subsequent career adaptation outcomes. Such studies would require longitudinal measurements of salient career variables during studies (e.g., career decidedness, progression, and retention) and after graduation (e.g., professional self-efficacy, employment).

4.9.2 Implications for Practice and Assessment

Higher education institutions preparing graduates for the contemporary world of work (Oliver & Jorre de St Jorre, 2018), amidst this so-called 4th industrial revolution (Schwab,

2016), must develop their graduates' readiness in several psychosocial domains. These include readiness to manage unknown or at least unpredictable organizational changes in their workplaces, readiness to search for new opportunities to assure their viability and sustainability in a volatile employment market, and readiness to search for and secure new employment opportunities when their current work and income is no longer available. Assessing and teaching within curricula to enhance graduates' dispositional employability is a reasonable response to that challenge. In situations where faculty might be asked by university management to develop plans to address poor employment outcomes of their graduates, the measures in this study could be used to inform the development of measures of students' employability and to evaluate the effectiveness of initiatives that aim to enhance graduate employability by increasing students' engagement in career adaptive behaviors.

The present research also lends support to career counseling and education targeting students' engagement in career adaptive behavior, such as career planning, career exploration activities (e.g., Miller et al., 2018; Whiston et al., 2017), and job search interventions (Liu et al., 2014). Career counselors could recommend students complete psychometric measures to identify current levels of dispositional employability, career adaptability, and job search self-efficacy. The results of the assessment could be addressed in career counseling sessions to discuss a student's current approach to career self-management and identify opportunities to further enhance the individual's use of career adaptive behaviors.

4.9.3 Conclusion

In higher education, the issue of graduate employability is concerned with graduates achieving employment outcomes; however, there is insufficient research into employability as a psychosocial process. The present research findings demonstrate the importance of resilience, motivation and optimism as psychosocial processes that enable an individual to be willing to respond proactively and reactively to career challenges, development tasks, and

importantly for university students, transitions from study to employment. These findings behoove higher education institutions to include a psychological perspective on their strategies and curricula for graduates' employability.

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CHAPTER 5: STUDY 3

Study 3 is an investigation into students' selection of extra-curricular activities that support the development of their employability. The research deployed focus groups involving students ($N = 25$) across a mix of disciplines, domestic and international origin, level of study, and first-in-family background. Transcripts of the focus groups were analysed using template analysis focused on students' descriptions of career adaptive behaviours and career adaptability dimensions of concern, control, curiosity, and confidence. This present investigation has identified new findings that explain, using career construction theory, the motivations and interests of university students in engaging in activities that are likely to support the transition from university to work.

This study has been accepted for publication[3] and is reproduced in this chapter. The following text is from the author's submitted manuscript. The formatting, including location of tables and figures, has been changed to be consistent with the presentation style of this Thesis.

Brown, J. L., Dollinger, M., Hammer, S., & McIlveen, P. (2021). Career adaptability and career adaptive behaviors: A qualitative analysis of university students' participation in extracurricular activities. *Australian Journal of Career Development, 30*(3), 189 - 198. https://doi.org/10.1177/10384162211067014

[3] There have been some modifications to the heading, figure, table, and page numbers to ensure the Thesis works as a whole document. There are variations in spelling due to the requirements of journals for using Australian, English, or American spelling conventions.

Relations Between Dispositional Employability, Career Adaptability, Job Search Self-Efficacy, and Career Identity of University Students

The present research is an investigation into students' selection of extra-curricular activities that support the development of their employability. The research deployed focus groups involving students ($N = 25$) across a mix of disciplines, domestic and international origin, level of study, and first-in-family background. Transcripts of the focus groups were analysed using qualitative content analysis focused on students' descriptions of career adaptive behaviours and career adaptability dimensions of concern, control, curiosity, and confidence. This present investigation has identified new findings that explain, using career construction theory, the motivations, and interests of university students in engaging in activities that are likely to support the transition from university to work.

Keywords: employability, template analysis, career adaptability, extra-curricular activities, student voice

5.1 Introduction

In the globally competitive higher education sector, it is strategically important for universities to commit themselves to producing employable graduates (Bennett et al., 2017; Bridgstock & Jackson, 2019). Recent thinking about graduate employability is recognises the importance of the developing human, social, psychological, cultural, and identity capitals within students (Tomlinson, 2017). The strategies commonly used by universities to enhance graduate employability address these forms of capital through teaching and assessment of graduate attributes (Hammer et al., 2020; Oliver & Jorre de St Jorre, 2018), career development learning (Bridgstock et al., 2019), work integrated learning (McIlveen et al., 2011), and employability award programs that include curricular and extra-curricular learning activities (Jackson & Bridgstock, 2021; Russell & Kay, 2019; Watson, 2011).

The present research is focused on students' engagement in activities that develop their employability. We explore the idea of career adaptive behaviours that are a bridge between possession of employability capital and the achievement of employment outcomes. Career construction theory (Savickas, 2005, 2013) is used to qualitatively examine students' descriptions of their planned and actual engagement in career adaptive behaviours.

5.2 Career Adaptive Behaviours

Career adaptive behaviours are proactive and reactive behaviours that individuals use to develop their careers (Lent & Brown, 2013). Theoretical terms related to career adaptive behaviour include adapting responses (Savickas, 2005), personal adaptability (Fugate et al., 2004), and career self-management (King, 2004). Throughout this article we use career adaptive behaviour as an inclusive term for a range of career-related behaviours. In some instances, we use related terms when these need to be used precisely, particularly in relation to discussing a specific scholar's work or where the term is used in a theory or framework. Lent and Brown (2013, p. 560) identified a list of career adaptive behaviours that are used

across the lifespan. For university students in an exploration life phase, these behaviours include, but not limited to, “acquiring career-relevant experiences and skills” (e.g., through higher education, part-time work, volunteering); making and implementing career decisions; and managing the transition from university to work.

Extra-curricular activities which university students typically engage in include a variety of experiences that involve the use of career adaptive behaviours. These experiences include work experience/internships, further education (e.g., postgraduate study), volunteering, part-time employment, networking, international exchanges, mentoring, and development of portfolios (Clark et al., 2015; Jackson & Bridgstock, 2021; Kinash et al., 2016). Students engage in extra-curricular activities for enjoyment and to enhance their confidence, social skills, and planning and organising capabilities (Thompson et al., 2013). Extra-curricular activities may partially compensate for enhancing labour market competitiveness for students who are not high academic achievers (Thompson et al., 2013). In an employability module in a health science undergraduate program, students’ career plans were analysed and found to plan engagement in activities that address human and social capital (Brown, Healy, Lexis, et al., 2019) However, not all students are interested in engaging in extra-curricular activities. Some are focused on achieving high grades or holding part-time jobs to fund living expenses (Greenbank, 2015).

University students and graduates are aware of the importance to employers of activities that evidence development of personal attributes and skills (Thompson et al., 2013; Wilton, 2014). A cross-cultural study of graduates in three countries found that graduates participated in activities that signalled their suitability for a job in alignment with the recruitment practices of employers in those countries (Saito & Pham, 2018). For example, Australian graduates highlight their work experience and good academic results; Japanese graduates attempt to show a good cultural fit to the company; and Vietnamese graduates

emphasise personal networks. Other research has found differences in the views of employers and students as to which specific extra-curricular activities are relevant to obtaining employment (Kinash et al., 2016), and that graduates perceive extra-curricular activities as having limited direct impact on obtaining employment in the first few years after graduation (Jackson & Bridgstock, 2021).

Research into students' use of career adaptive behaviours has identified lower than expected engagement in activities known to support employment outcomes, and this lower engagement is attributed to a lack of career planning (Jackson & Tomlinson, 2020; Thompson et al., 2013). Jackson and Tomlinson (2020) found that students' proactive behaviours increased as perceptions of labour market opportunities decreased. Furthermore, these studies highlight that there is little research in the higher education employability literature that help explain, through established theories, how students engage in career adaptive behaviours that enhance employability. Healy et al. (2020) identified two distinct bodies of literature that explore the development of graduate employability and employment outcomes. The first is the higher education literature which tends to focus on graduate attributes (Oliver & Jorre de St Jorre, 2018), human, social, and psychological capital, and career identity (Clarke, 2018; Tomlinson, 2017), and the effectiveness of institutional strategies (Bennett et al., 2017; Bridgstock & Jackson, 2019) and programs such as work integrated learning, extra-curricular activities, and employability awards (Jackson & Bridgstock, 2021; Russell & Kay, 2019; Watson, 2011). The second is the career development literature, which has long established and tightly bounded theories describing how individuals engage in career exploration, career decision-making, enact career adaptive behaviours, and achieve career outcomes (Healy et al., 2020). The present research is embedded in the career development literature and uses career construction theory (CCT; Savickas, 2005; Savickas, 2013) to inform the higher education literature. In the next section, we provide an overview of CCT and then outline the

present qualitative research examining students' descriptions of their engagement in career adaptive behaviours that support their employability, which will be analysed through the theoretical lens of CCT.

5.3 Career Construction Theory

CCT (Savickas, 2005, 2013) asserts that individuals engage in psychosocial processes to adapt to three main career challenges throughout their lifespan: vocational development tasks (i.e., preparing for entry into the workforce); occupational transitions (i.e., changing jobs, preparing for retirement); and work traumas (i.e., unplanned and unwanted career events). A central feature of CCT is the career adaptation model which explains how a variety of personal traits and dispositions interact with psychosocial resources to enable individuals to engage in behaviours that lead to achievement of outcomes (such as employment). The four components of career adaptation are conceptualised as a chain of effects: *Adaptivity→Adaptability→Adapting→Adaptation* (Savickas & Porfeli, 2012).

The first part of the chain of effects, *adaptivity*, is an individual's willingness to respond to vocational developmental tasks, occupational transitions, and work traumas (Savickas, 2013). Dimensions of adaptivity include proactive personality (Brown et al., 2006; Hirschi et al., 2015), core self-evaluations (Hirschi et al., 2015), psychological capital (Pajic et al., 2018) and resilience, hope, and optimism (Buyukgoze-Kavas, 2016). The second component, *adaptability*, is conceptualised as the psychosocial resources an individual utilises to respond to vocational developmental tasks, occupational transitions, and work traumas (Savickas, 2005). These adaptability resources include dimensions of control, concern, curiosity, and confidence (Savickas, 2005, 2013). These dimensions of career adaptability are the focus of the present research. The third component, *adapting*, is the enactment of career adaptive behaviours directed toward resolving career challenges (Savickas, 2013), such as career planning, career exploration, occupational self-efficacy and

career decision-making self-efficacy. Research has found evidence that adapting is positively related to adaptation (Johnston, 2018; Rudolph et al., 2017). The fourth component, *adaptation* results are the outcomes (determined by success or satisfaction) of adapting responses (Savickas, 2013) and include career, life, job, and school satisfaction; affective organizational commitment; lower job stress; higher income; work engagement; and career identity (Rudolph et al., 2017). Recent research provides evidence of direct and indirect relations among elements of the career adaptation model (Hirschi et al., 2015; Johnston, 2018; Öztemel & Yıldız Akyol, 2021; Perera & McIlveen, 2017; Rudolph et al., 2017). Thus, taken together, Adaptivity→Adaptability→Adapting are the multifactorial constituents of employability that are the antecedents of employment (adaptation).

5.3.1 Career Adaptability

Career adaptability has been found to positively relate to proactive career behaviour (Spurk et al., 2020), self-perceived internal and external marketability (Spurk et al., 2016), career planning, career exploration, and self-efficacy (Rudolph et al., 2017). Career adaptability represents psychosocial resources that support enactment of adapting responses (or career adaptive behaviours) and is of interest in understanding how university students engage in extra-curricular activities. We now explore the set of attitudes, behaviours, and competences that Savickas (2005) associates with each dimension of career adaptability.

Concern is about having an orientation to the future. Savickas (2013) describes career as an idea rather than a behaviour, which is constructed through the stories we tell about our vocational past, present and future. Career concern (Savickas, 2005) connects the present and past to a possible future and enables an individual to utilise attitudes of planfulness and optimism to and engage in behaviours that prepare them for future vocational roles. *Control* is an agentic approach to taking ownership and responsibility for constructing one's own career. Attitudes of assertiveness and decisiveness support individuals to engage in

behaviours to navigate vocational developmental tasks and occupational transitions. *Curiosity* is about exploration of the self and the vocational environment to gain knowledge about one's abilities, interests and values, and the environment—occupations, industries, labour market trends. This knowledge enables individuals to make career decisions that are more realistic than decisions made in the absence of information. *Confidence* signifies self-efficacy beliefs associated with the individual's ability to undertake behaviours that support achievement of educational and vocational choices.

Based on the descriptions of the career adaptability we expect that students with a dominant career adaptability dimension of concern would most likely express feelings about their transition from university into a career and have identified activities that might support achieving their career goals. Those with a sense of control would be actively engaged in extra-curricular activities. The curious students would likely be engaged in activities to explore potential career options, seek out career information, and perhaps build networks and seek out mentors. Confident students will most likely have completed a number of activities and have developed the confidence to achieve their career goals.

5.4 The Present Research

Only a few qualitative studies have been published to examine how career adaptability supports individuals' proactive or reactive responses to career challenges. Qualitative studies have examined career adaptability in career development practitioners (Bimrose et al., 2019), mid-career changers (Brown et al., 2012) and refugee job seekers (Wehrle et al., 2019). There is a need to examine qualitatively, how university students' career adaptability resources facilitate their engagement in career adaptive behaviours, such as extra-curricular activities offered in university employability award programs. Through a post-positivist research worldview (Creswell, 2014), the present investigation addresses this gap in the literature. The research questions are as follows:

RQ1: Which career adaptive behaviours do students identify as supporting their development of employability?

RQ2: What are the qualitative differences between each dimension of career adaptability on engagement in career adaptive behaviours?

5.5 Method

5.5.1 Participants

Twenty-five students participated in the study, across seven focus groups. Participants were students at a large metropolitan university, enrolled in a variety of academic disciplines. Their ages ranged from 21 to 44 years (M = 26), 52% of the participants were female, 48% were undergraduate students, 56% were international students, and 64% were the first generation in their family to attend university. Demographic information about each participant is listed in Table 1. Participants who were engaged in the university's Employability Award program were invited to participate as it was known that these students have been engaged in at least one extra-curricular activity. The invitation email provided an overview of the research, and a link for potential participants to register for a focus group session across various dates and times. All focus group participants received a $10 voucher to be used at a café on campus. Participation in the research was entirely voluntary and the research was approved by the Human Research Ethics Committee of the University of Southern Queensland.

Table 16

Demographics of Focus Group Participants

Participant	Sex	Age Group	Origin	Course Level	FIF
1	Male	26-30	Domestic	Undergraduate	Yes
2	Female	18-25	International	Postgraduate	Yes
3	Male	18-25	International	Postgraduate	Yes
4	Male	18-25	Domestic	Undergraduate	Yes
5	Female	18-25	Domestic	Undergraduate	No
6	Female	41+	Domestic	Undergraduate	No
7	Female	26-30	Domestic	Undergraduate	Yes
8	Female	18-25	International	Postgraduate	Yes
9	Male	18-25	International	Postgraduate	Yes
10	Male	18-25	International	Undergraduate	No
11	Male	18-25	Domestic	Undergraduate	Yes
12	Female	-	International	Postgraduate	No
13	Female	26-30	International	Postgraduate	Yes
14	Male	18-25	International	Postgraduate	Yes
15	Female	18-25	International	Undergraduate	Yes
16	Male	18-25	International	Postgraduate	Yes
17	Female	18-25	Domestic	Undergraduate	No
18	Female	18-25	International	Postgraduate	No
19	Female	18-25	Domestic	Undergraduate	Yes
20	Male	18-25	International	Undergraduate	No
21	Male	26-30	International	Postgraduate	No
22	Male	41+	Domestic	Undergraduate	Yes
23	Female	-	International	Postgraduate	Yes
24	Male	18-25	Domestic	Undergraduate	Yes
25	Female	36-40	Domestic	Postgraduate	No

Note. FIF = first in family to attend university

5.5.2 Procedure

The focus group sessions were conducted in seminar rooms on the university's metropolitan campus. After providing written informed consent, participants were asked a mixture of descriptive and qualitative questions about their career adaptive behaviours. Semi-structured questions were used in the focus groups, with the following questions asked in each focus group:

- When you think about finishing your degree and finding your first graduate job, how does this make you feel?
- What activities are you involved in that you think will help you achieve your career goals?
- What other activities that important people in your life say you should be doing, that you are not?
- What kind of behaviours do you think a highly employable graduate would use to obtain a job relevant to their studies?

During the focus groups, the researchers (two at each focus group) asked clarifying or follow-up questions and steered the discussion back to main research topics. Focus groups lasted approximately one hour. All focus groups were also audio-recorded and transcribed verbatim.

5.5.3 Data Analysis

Researcher observational notes and the transcribed focus group data were imported to NVivo v12.0. A qualitative content analysis (QCA; Hsieh & Shannon, 2005; Selvi, 2019) technique was used to analyse the data deductively. There are three broad approaches to QCA: conventional content analysis, where codes are derived from the data and defined during the coding process; directed content analysis, where codes are derived from theory and defined prior to coding; and summative content analysis, where keywords are derived from the researcher's interest or from the literature, and defined prior to, and during coding (Hsieh

& Shannon, 2005). As the research questions for this study are aimed at examining theoretical questions related to CCT, a directed content analysis approach was chosen for coding and analysing the focus group transcripts. The codes identified *a priori* included career adaptability dimensions of concern, control, curiosity, and confidence. Career adaptive behaviours were coded using terms commonly used in universities and the literature. Examples include work experience, volunteering, mentoring, and networking. In the first stage the researcher (first author) read and re-read the transcripts to develop familiarity with the data. The preliminary coding was conducted on the transcripts from all seven focus groups, with coding conducted at the level of participant responses. The next stage involved re-reading the transcripts, organising the codes into meaningful *categories*, and deepening the interpretation of relationships between codes and meaning of the responses. The final stage involved running a matrix code report in NVIVO to obtain the frequency data for interactions of codes between career adaptability dimensions and career adaptive behaviour categories.

5.6 Results

The findings from this research are evidence of the expected qualitative differences in engagement in career adaptive behaviours as influenced by students' dominant career adaptability dimension of concern, control, curiosity, and confidence. We found that students career adaptive behaviours could be categorised as supporting the development of human and social capital. Table 2 summarises these differences in career adaptive behaviours aimed at developing human and social capital.

Table 17

Summary of Differences in Career Adaptive Behaviours by Dimensions of Career Adaptability

Career Adaptive Behaviours	**Career Adaptability**			
	Concern	Control	Curiosity	Confidence
Human capital	Concerned about labour market competitiveness; able to identify activities to support employability	Purposeful engagement in activities connected to a career goal	Engagement in exploratory activities	Engagement in activities that signal developing professional capabilities
Social capital	Planning on engaging in activities to build social network	Engagement in transactional activities to build social network	Engagement in exploratory activities to build social network and gather career information	Engagement in relationship building networking behaviours

5.6.1 Career Adaptability

According to Savickas (2013), career concern is the most important dimension of career adaptability as it orientates the individual to the future. Without career concern, the other dimensions of career adaptability are unable to be executed. In the focus groups, student discussion about their feelings toward graduating and transitioning to the workforce revealed a range of emotions, reflective of a concern about their future. The range of emotions included anxiety about their future career, job search process and labour market conditions due to perceptions about the challenges that lay ahead. For others, there was excitement about finishing and a future orientation toward making a transition from university to work. Some students were still exploring a range of options available to them, particularly in relation to making a decision about further study or transitioning to the workforce. Whereas those students who were older and had some professional work history appeared unphased about

finding a job at the end of their studies because of their prior job application experience and their previous employment history

There is evidence of the other dimensions of career adaptability—control, curiosity, and confidence. However, analysis of these dimensions is closely associated with descriptions of engagement in career adaptive behaviours. Hence, we address these in the next part of the analysis examining student's approaches to the use of career adaptive behaviours toward building their employability.

5.6.2 Career Adaptive Behaviours

Eleven types of career adaptive behaviours were referenced that the students collectively deploy to enhance their employability and employment prospects. We have grouped those activities into two clusters. The first, *developing human capital* included engagement in employment, further study, innovation challenges, qualifications, skill development, volunteering, and work experience/internships. The second, *building social capital,* included mentoring, networking, sports, and student clubs and societies. Table 3 lists the career adaptive behaviours and frequency of mentions. The descriptions of engagement in career adaptive behaviours were coded according to one of the dimensions of career adaptability based on the relevant attitudes, behaviours and competencies described. It is important to note that the interpretation of the frequency of career adaptive behaviours is not to be interpreted quantitatively. Rather, this data is provided to show the spread of responses in this particular focus group study. Different results would have been obtained if there were more participants in the group, or if more time had been allocated to exhaust the list of career adaptive behaviours that students enacted. The level of interpretation is focused on the interactions between career adaptability and the career adaptive behaviours.

Table 18

Frequency of Career Adaptive Behaviours Coded to Dimensions of Career Adaptability

	Career Adaptability			
Career Adaptive Behaviours	Concern	Control	Curiosity	Confidence
Human capital (total)	*19*	*16*	*7*	*1*
Employment	0	**3**	0	0
Further study	**1**	**6**	0	0
Innovation challenges	0	0	**1**	0
Qualification	**1**	0	0	0
Skill development	**6**	0	0	0
Volunteering	**2**	**4**	**6**	**1**
Work experience / internships	**9**	**3**	0	0
Social capital (total)	*9*	*9*	*6*	*5*
Mentoring	**2**	**5**	1	0
Networking	**6**	**3**	**3**	**3**
Sport	0	0	0	**1**
Student clubs	**1**	**1**	**2**	**1**

Note. Numbers in bold are to aid interpretation of the results.

5.6.2.1 Development of Human Capital

Students described activities that support development of human capital, including volunteering, work experience, further study, skill development, employment, academic performance, qualification, and innovation challenges.

Reflecting the career adaptability dimension of *concern*, the perception among students in the focus groups was that employers prefer graduates with experience. International students were acutely aware of the disadvantage they face in the Australian labour market and felt that they needed to develop as much experience as possible. Students identified skill development and work experience as the main activities that they could engage in to support their employability.

> Participant 5: I'm going to look like a better candidate if I've actually done something similar to what they're looking for.

Students who exhibited elements of the career adaptability dimension of *control* were actively engaged in activities to develop their employability. Specifically, they described involvement in paid employment, internships, and gaining additional skills through short courses (e.g., LinkedIn Learning) and industry-specific micro-credentials (e.g., programming language certificates). The activities were chosen because of a belief or understanding that the activity would be viewed favourably by a future employer.

> Participant 6: I've done a couple of things, just like my level two first aid and things that I think will actually help. Okay, so I will need to have them to be a classroom teacher anyway … I don't do it during the semester, to be honest, if I can help it. But on the break, I try and do something that can help lead towards a better portfolio.

The career adaptability dimension of *curiosity* is about individual's engaging in exploration activities, which emerges from the development of control (Savickas, 2013). Many of the responses revealed a lack of strategic selection of activities that would work towards a goal and is indicative of what Savickas describes as a career problem of indecisiveness. In this focus group, volunteering was the main activity for students demonstrating the adaptability dimension of curiosity. The motivations to volunteer included a mix of interest, self-exploration and sometimes an element of hope that the activity might lead to something.

> Participant 4: I do volunteering. But yeah, I'm not sure if it like counts … I'm just doing it more to like, I don't know, because I like helping people.

As a demonstration of confidence, we expect to see evidence of engagement in activities that signal to potential employers that the student is developing professional capabilities. There was an insufficient number of responses from students in these focus

groups that described the behaviours and competencies that define the adaptability dimension of confidence.

5.6.2.2 Building Social Capital

Networking was viewed by students as the main activity to develop social capital, which is unsurprising given a common piece of career advice for job seekers is to engage in networking to find opportunities in the "hidden job market". Other activities that build social capital were mentioned in the focus groups, including mentoring, and participation in community sport and university student clubs and societies. None of these activities produced enough data to examine qualitative differences influenced by the adaptability dimensions. The networking behaviours that students described ranged from showing an interest or desire to increase the size of their network, through to transactional, exploratory attempts to use networks to identify opportunities, and more mature approaches where networks have been established and nurtured over time.

As expected, students who showed *concern* about building social capital had intentions to build a professional network, however, many of the students in the focus groups were lacking in skills or confidence to engage in networking behaviours. They showed an understanding of the importance of a network and described how friends have been able to find part-time jobs at university through established networks.

> Participant 15: I would say that everyone sees networking is the key and everything, and that is the only thing that I'm not doing. Because I guess it's really difficult for a person who is quiet, who is an introvert to really go into the place and just start talking or start the conversation. So networking is, networking is one thing I really need to work on. But I'm still confused where to start and where to go, or how to start the conversation.

Some students demonstrated *control* through active engagement in networking and regular attendance at networking events. Networking events were chosen to meet professionals in their discipline area. Some participants attended networking events explicitly to look for a potential employer but were often disappointed to only meet other students and job seekers.

> Participant 10: Everyone's just seeking a … business guy or something, you know, but there is no business guys, because they [are] only students, so I guess it's not really helpful.

Some students were approaching networking with a sense of *curiosity*, which was evident through descriptions of attending events to learn more about an industry or profession. However, there were also unrealistic expectations that an immediate outcome would be generated by attending a networking event.

> Participant 17: I go in and ask a question … and then once that meeting is over, then that's it. But I don't see any, I guess, increased opportunity from that.

The students who had commenced building a professional network described more mature approaches to networking, reflecting *confidence*. One student described how she was able to connect her partner to a potential employer through her part-time job. She demonstrated building a rapport with a regular customer, which enabled her to gain sufficient trust to start a discussion about her partner's interest in finding a new job. A postgraduate student has been working as a research assistant and is benefitting from a supervisor who is providing sponsorship to support his career development.

> Participant 1: My supervisor has given me the opportunity to go overseas and present my work and talk to other people in the field.

In summary, the students' descriptions and explanations of their behaviours are experiential evidence of their career adaptability.

5.7 Discussion

Previous quantitative research has demonstrated positive relations between adaptability and adapting (for a review, see Rudolph et al., 2017). This current research provides qualitative evidence of the how university students' career adaptability influences their participation in extra-curricular activities to develop employability. Our findings demonstrate the utility of career construction theory's adaptation model (Savickas, 2005, 2013) to explain the identification of, and enactment of, career adaptive behaviours that university students use to develop their employability.

Adaptability dimensions of concern, control, curiosity, and confidence (Savickas, 2005, 2013) were evident through students' descriptions of their selection of career adaptive behaviours. Students' concern was apparent through intentions to engage in internships, volunteering, and networking events. Students who demonstrated control were actively engaged in activities, sometimes to demonstrate to a future employer their interest and commitment. Curiosity was noted through some students' engagement in activities to explore potential career options, although many of these students appear to do this in an unplanned manner. This lack of planning has been highlighted in other research (Jackson & Tomlinson, 2020; Thompson et al., 2013) and is an opportunity for university career services to develop interventions to increase students' engagement in career planning. A minority of students in this study demonstrated confidence through undertaking activities as part of a considered strategy to achieve a desired career outcome. Previous studies have shown that individuals with high levels of career adaptability reduce their engagement in career adaptive behaviours (Spurk et al., 2020), or those who perceive plenty of opportunities in the labour market are less inclined to use proactive behaviours (Jackson & Tomlinson, 2020). As participants were recruited from the university's employability award program, it is possible that students with

higher levels of career adaptability resources might be less likely to be engaged in such programs.

Twelve career adaptive behaviours were identified that students use to enhance their employability. These behaviours were categorised as development of human capital and building social capital. Students in this study develop human capital through gaining relevant experiences through internships, volunteering, paid employment, and further study. Students who were planning on engaging in human capital-related activities were more focused on internships and skill development activities, perhaps reflecting students' feelings of a lack of perceived employability (Rothwell et al., 2008). Those students exhibiting control were engaged in employment, internships, volunteering, and further study, such as micro-credentials. It is likely that these students recognised that whatever activities they were doing, they were developing skills and experiences that would be valuable when applying for graduate jobs. The curious students were mostly engaged in volunteering. Volunteering is commonly recommended to people who have little work experience, as a strategy to gain experience and develop a network. However, this strategy may not be the most effective in achieving an employment outcome. Recent analysis of an Australian national survey has found that 65.8% graduates who had volunteered at university were in full-time employment four months after graduation, compared with 72% who had completed a work-based learning experience, and 74.7% who participated in a co-curricular mentoring program (ACEN, 2020). Our findings shed some light into this finding of lower employment outcomes for those who volunteered. It may not be that volunteering per se is ineffective, but that students who are volunteering to explore career options may require further support from career development practitioners to identity potential career paths.

Students were focused on attendance at networking events as the primary way in which to develop social capital. Students indicating concern, discussed the importance of

networking, but many were lacking in skills and confidence to make a start on building their professional network. Those who were attending networking events either had unrealistic expectations of an outcome or found that they were at events where most people were fellow students or job seekers. As has been argued elsewhere, universities have deep connections to industry and alumni, and therefore have capacity to facilitate the introduction of students to those important networks (Bridgstock, 2017).

5.7.1 Implications for Practice

The expectation that engagement in career adaptive behaviours will lead to outcomes is implicit in students' motivations and has been examined in previous studies. Some scholars have questioned the efficaciousness of extra-curricular activities in leading to employment outcomes (Jackson & Bridgstock, 2021; Kinash et al., 2016) and indeed some students in this present research were unsure if engagement in career adaptive behaviours would result in a desirable outcome. Lent and Brown (2013) note that career adaptive behaviours increase the chance of an outcome, but do not guarantee one. There are a few strategies that universities could implement to support student participation in career adaptive behaviours. The first is to provide careers and employability learning opportunities within the curriculum that increase students' knowledge and skills to engage in networking activities (Bridgstock et al., 2019; Brown, Healy, Lexis, et al., 2019), and career planning that supports selecting appropriate and effective extra-curricular activities.

Perhaps the expectations of students and scholars about the impact of career adaptive behaviours, in particular extra-curricular activities, on employment outcomes are unrealistic. Practitioners and scholars should not lose sight of the fact that employment outcomes cannot be achieved in the absence of job search behaviours. If students do not know how to seek and secure quality work, the effectiveness of employability strategies will be limited. Therefore, the inclusion of career self-management skills in the curriculum, developed in collaboration

with career development practitioners and academics, is an important component for successful employability strategies (Bridgstock, 2009; Bridgstock et al., 2019; Brown, Healy, McCredie, et al., 2019).

Second, there is potential for universities to work more closely with students towards co-creating employability strategies and support mechanisms. Creation of new programs or improvements to existing ones can be fostered through 'student partnership' programs that allow students to co-design services or resources with university staff (Dollinger & Lodge, 2020). In fact, universities could continue to offer partnership or collaborative opportunities for students that can improve institutionally run programs and services while also helping students achieve in-demand volunteering or work experience that they can later add to their resume or submit towards employability awards (Taylor & Govender, 2017).

The third relates to career development practitioners. CCT was originally developed through qualitative research (Savickas, 2005). The findings of this study demonstrate that it is possible to identify students' dominant career adaptability dimensions through analysis of their stories. Savickas describes through case study examples how career development practitioners can identify a client's career adaptability and use this information to support the client overcome challenges and constraints.

5.7.2 Implications for Future Research

This investigation is an example of the benefit of connecting higher education graduate employability and career development literatures and the importance of theory-driven research (Healy et al., 2020). This present investigation has identified findings that explain, using career construction theory, the motivations, and interests of university students in engaging in activities that are likely to support the achievement of employment outcomes. Other research has shown that adaptability and adapting develop together over time (Spurk et al., 2020). Future research should track the changes in career adaptability as students

participate in employability award programs and other extra-curricular activities during their time at university. Future studies could use a mixed method design to ensure sampling participants for qualitative research from participants with different career adaptability profiles to further interrogate the interaction between career adaptability and adapting responses.

A limitation of this study is that data was not collected on the level of engagement in the employability award. Participants were drawn from students who had completed at least one activity, but it is not known how many had progressed through to higher levels of the award. In addition, there was a lack of representation of students with high levels of career adaptability, which could have informed how these students approach engagement in career adaptive behaviours.

5.8 Conclusion

Our findings provide qualitative evidence of the influence that career adaptability resources have on the selection and engagement in career adaptive behaviours amongst a group of university students. Specifically, we found that students focus their development of human and social capital aspects of their employability, and that the approaches are influenced by career adaptability resources of concern, control, curiosity, and confidence. There are opportunities for universities to better support students to plan their engagement in activities that enhance their employability.

5.9 References

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CHAPTER 6: GENERAL DISCUSSION

The purpose of this doctoral research was to explore the psychosocial factors of employability that support university students' engagement in career adaptive behaviours, with an intention to inform the design of employability-focused curricula and extra-curricular programs. This final chapter (a) summarises the main findings of the three studies; (b) integrates the findings from the three studies with CCT's career adaptation model; (c) proposes a process model for developing graduate employability; (d) discusses the limitations of the studies; and (e) makes recommendations for future research, practice, and policy.

This Thesis-by-Publication is a portfolio of empirical studies designed around three independent, but related studies examining graduate employability. In addition, this portfolio of research was designed as the starting point of my research career with aims to contribute to employability literature within both the higher education and vocational psychology literatures, and to inform the design of evidence-based programs within universities to enable greater numbers of students to obtain quality graduate employment outcomes. The first study tested the assumed link between human capital aspects of employability and employment outcomes. The second study, evaluated the suitability of the DME (Fugate & Kinicki, 2008) as a measure of dispositional employability in university students, and tested its relations with measures of career adaptability, job search self-efficacy, and career identity. The third study, using a qualitative design, sought to better understand why students select certain extra-curricular activities in which to develop their employability. I will now summarise the three studies and highlight the main contributions this Thesis makes to the employability literature.

Study 1 found that current measures of graduate satisfaction used in the Australian higher education system have limited relation to graduates' actual employment outcomes. The study investigated relations between graduates' skills and qualities and employment outcomes using data collected by the Australian Government through the national Graduate

Outcome Survey (GOS) and Course Experience Questionnaire (CEQ). Publicly available data from the Australian Government's national Graduate Outcomes Survey from 2015 to 2017 (N = 110,685) was accessed to explore if the subscales of the Good Teaching Scale (GTS), Graduate Skills Scale (GSS), and Graduate Qualities Scale (GQS) predicted graduates' decisions to take further studies, their employment status, and their overall satisfaction. Using probit logistic regressions, GTS was found to predict graduates' overall satisfaction with their course experience, and the GSS and GQS subscales combined were found to predict negligible increases in employment outcomes. This finding of no substantive relation is evidence to call into question how these national surveys are used by universities. The empirical findings from this study raise serious concerns about the misuse of this data to help prospective students make important decisions about enrolment in a university course (e.g., the Australian Government's ComparED website; QILT, 2021). Furthermore, these findings raise doubts as to the efficaciousness of universities' strategies to enhance employability via the teaching and assessing of graduate attributes.

Study 2 found that dispositional employability held significant relations with measures of career adaptability, adapting responses, and adaptation outcomes. The results support the conceptualisation of the DME subscales (Fugate & Kinicki, 2008) and provides new validity evidence for DME as a measure of the multidimensional latent construct dispositional employability. To summarise, Study 2 aimed to (1) determine the measurement properties of the DME (Fugate & Kinicki, 2008) in samples of Australian university students; and (2) establish if the DME's subscales held relations with measures of career adaptability, job search self-efficacy, and career identity. In Study 2a (N = 751), principal axis factoring (PAF) was used to initially determine the measurement properties of the DME and other measures that were to be used in Study 2b. With minimal differences from the original measure (Fugate & Kinicki, 2008), we recovered DME's factor structure. In Study 2b (N =

719), the aim was to investigate whether the DME's subscales represent aspects of the adaptivity component of CCT's career adaptation model (Savickas, 2005, 2013; Savickas & Porfeli, 2012). Analysis using hierarchical regressions indicated that the DME was significantly related to career adaptability and job search self-efficacy. Furthermore, multinomial regression analysis found that students' responses to measures of DME, career adaptability and job search self-efficacy predicted category membership of career identity. These findings support the use of the career adaptation model (Savickas & Porfeli, 2012) as an empirical framework to be used in future research to contribute to theory building of how dispositional employability contributes to the achievement of employment outcomes.

Study 3 found that university students' decisions to engage in extra-curricular activities, such as volunteering and internships, was influenced by their dominant dimension of career adaptability (Savickas, 2005, 2013). Study 3 aimed to examine qualitatively how university students' career adaptability resources facilitate their engagement in career adaptive behaviours, such as extra-curricular activities offered in university employability award programs. The research deployed focus groups involving students (N = 25) across a mix of disciplines, domestic and international origin, level of study, and first-in-family background. Transcripts of the focus groups were analysed using content analysis. Adaptability dimensions of concern, control, curiosity, and confidence (Savickas, 2005, 2013) were evident through students' descriptions of their selection of career adaptive behaviours, which were predominantly selected to focus on the development of human and social capital. The findings from Study 3 highlight the importance for educators and students to recognise that career adaptive behaviours form part of an overall strategy to enhance students' dispositional employability dimensions of human, social, and psychological capital.

Next, I outline the contribution this Thesis makes to the literature, where I integrate the significant findings from the three studies with CCT's career adaptation model (Savickas,

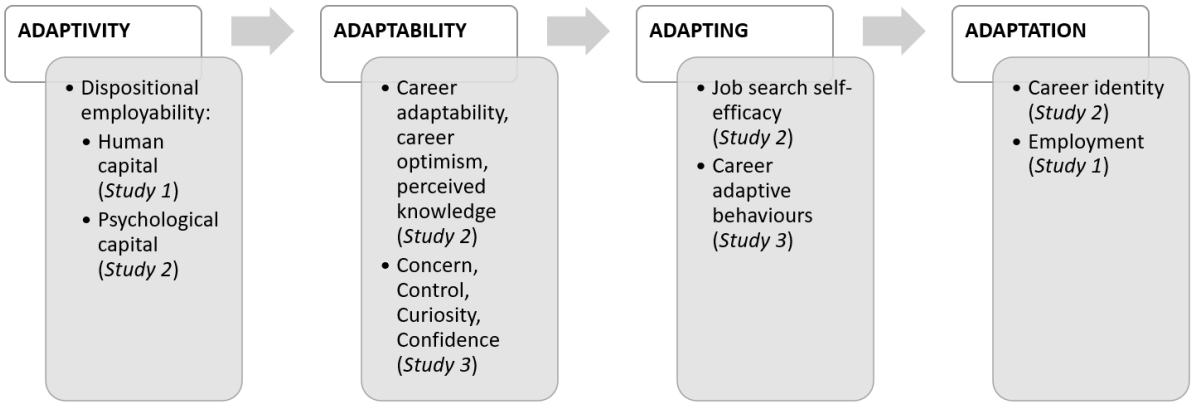
2005, 2013; Savickas & Porfeli, 2012). In addition, the three studies in this Thesis are informed by empirical evidence from the graduate employability and career development literatures, which is an important contribution to informing the design of programs and interventions in higher education to support graduate employability.

6.1 Career Adaptation Model as a Framework for Dispositional Employability

The findings from the three studies provide several contributions to theory development. I argue that CCT's adaptation model (Savickas, 2005, 2013; Savickas & Porfeli, 2012) is recommended as an appropriate theoretical framework in which to further research the direct and indirect contribution of dispositional employability to adaptation outcomes relevant to university students and graduates, such as employment outcomes and career identity development. Figure 5 shows the chain of effects model of adaptivity→adaptability→adapting→adaptation with the variables examined in this Thesis attached to the relevant component of the adaptation model. Within the framework of the career adaptation model, I provide empirical evidence of the DME's utility as an indicator of adaptivity and put forward a case to add psychological capital as a dimension of dispositional employability.

Figure 5

Career Adaptation Model Applied to Dispositional Employability



6.1.1 Adaptivity

Across the three studies in this Thesis, I provide evidence that argues that dispositional employability meets the criteria as an indicator of adaptivity, and that the conceptualisation of dispositional employability be expanded to include psychological capital.

Savickas (2013) defines adaptivity as an individual's willingness to respond to vocational developmental tasks, occupational transitions, and work traumas. In comparison, dispositional employability's dimensions of human and social capital, and personal adaptability represent an individual's willingness to engage in proactive behaviour directed toward responding to career related changes and challenges (Fugate et al., 2004). Furthermore, the career adaptation model (Savickas, 2005, 2013) positions adaptivity as the first element of the chain of effects from adaptivity→adaptability→adapting→adaptation. Similarly, Fugate and Kinicki (2008) argued that dispositional employability represents stable personal attributes or traits, within the work domain, that are antecedent to career adaptability and career behaviour. Although few longitudinal studies have examined this chain of effect,

meta analyses have provided support for the conceptual ordering of those elements of the model (Rudolph, Lavigne, Katz, et al., 2017; Rudolph, Lavigne, & Zacher, 2017).

Savickas (2013) argues that adaptivity by itself does not create an outcome, adaptivity must be paired with psychosocial resources (adaptability) to enable engagement in adapting responses. Study 2 found that the DME subscales held significant relations with measures of career adaptability, job search self-efficacy, and career identity. This evidence supports the argument by Fugate et al. (2004) that dispositional employability is a psychosocial process indicating an individual's readiness to enact proactive career behaviours.

Several factors that are similar to dispositional employability have been used as indicators of adaptivity in previous research, including proactive personality (Brown et al., 2006; Hirschi et al., 2015), core self-evaluations (Hirschi et al., 2015), psychological capital (Pajic et al., 2018), resilience, hope, and optimism (Buyukgoze-Kavas, 2016), and Big Five personality traits (Perera & McIlveen, 2017). Indeed, the DME could be described as a measure of psychological capital. The DME domain-specific subscales of resilience, motivation, and optimism, closely resemble psychological capital's context-general dimensions of hope, efficacy, resilience, and optimism (Luthans & Youssef-Morgan, 2017). Fugate and Kinicki (2008) recognised the possibility that other dimensions could be incorporated in the future: "it is conceivable and likely that an expanded operationalisation would more completely capture the conceptual intent of dispositional employability" (p. 523).

Based on the conceptual overlap with adaptivity, and the empirical evidence from Study 2 that dispositional employability is significantly related to career adaptability, job search self-efficacy, and career identity, I argue that dispositional employability is an indicator of adaptivity, and that CCT's adaptation model be used as the framework to design future research testing relations between dispositional employability and career outcomes.

In arguing for dispositional employability as an indicator of adaptivity, I have presented a connection to career construction theory which provides an avenue for future investigations into how dispositional employability supports proactive engagement in behaviours that lead to important outcomes, including employment. As other scholars have noted, there is a lack of theory building in the employability literature (Williams et al., 2016) and a disconnection between empirical evidence in the vocational psychology and higher education literatures (Healy et al., 2020).

6.1.2 Adaptability

Study 2 demonstrated that dispositional employability held significant and positive relations with the CFI-9 dimensions of career adaptability, perceived knowledge, and career optimism. Although some scales measure the four dimensions of career adaptability described by Savickas (2013)—concern, control, curiosity, and confidence (e.g., Maggiori et al., 2015; Savickas & Porfeli, 2012), other conceptualisations of career adaptability reference variables that Fugate and colleagues (Fugate & Kinicki, 2008; Fugate et al., 2004) have identified as likely to be associated with dispositional employability. These variables include an orientation to the future, individual agency, occupational knowledge, optimism, and resilience (Park et al., 2019; Rottinghaus et al., 2012; Rottinghaus et al., 2005; Rottinghaus et al., 2017). While the Savickas (Maggiori et al., 2015; Savickas & Porfeli, 2012) and Rottinghaus measures of career adaptability (McIlveen et al., 2012; Rottinghaus et al., 2012) measure different aspects of career adaptability, both constructs hold similar strength relations with career adaptive behaviours (Spurk et al., 2020).

Study 3 used a focus group procedure to gain insights into students' decisions regarding engagement in career adaptive behaviours. Content analysis of the focus group transcripts identified the importance of career adaptability dimensions of concern, control, curiosity, and confidence in how students engaged in developmental career adaptive

behaviour, such as volunteering and internships. Most of the students' narratives indicated dominance of the dimensions of concern, control and curiosity. Rudolph, Lavigne, Katz, et al. (2017) in a meta-analysis found that the career adaptability dimension of control had the largest effect on self-perceived employability, with confidence the least effect. Spurk et al. (2020) found evidence that individuals with high scores on career adaptability tended to conserve resources by reducing engagement in career adaptive behaviour over time.

These two studies demonstrate the benefit of examining career adaptability from a diversity of conceptual approaches.

6.1.3 Adapting

Students' career adaptive behaviours (adapting responses) were examined from two different perspectives in this Thesis: (1) through the measurement of job search self-efficacy in Study 2; and (2) through qualitative analysis of students' choice of extra-curricular activities to develop their employability in Study 3.

In Study 2, there were two significant findings in relation to job search self-efficacy. First, the DME subscales were found to be positively and significantly related to job search self-efficacy behaviours and outcomes. Job search self-efficacy is a career adaptive behaviour which represents an individual's belief about their confidence to engage in behaviours related to job search and in achieving job search outcomes (Saks et al., 2015). According to CCT's model of career adaptation (Savickas, 2005, 2013), self-efficacy beliefs are considered as adapting responses as the beliefs are informed by behavioural experiences. Similarly, research applying social cognitive career theory finds that 54% of the explained variance of self-efficacy beliefs are contributed by learning experiences: personal mastery experiences, verbal persuasion, vicarious learning, and physiological and affective states (Lent et al., 2017). Second, the items from the JSSE behaviour subscale (Saks et al., 2015) were found to load on to two factors, representing active and passive job search behaviours. This is an

important finding as other research has identified that active job search behaviours are related to more job interviews, employment offers, and employment outcomes, compared with preparatory job search behaviour (van Hooft et al., 2021). Other research has also identified distinct factors in relation to self-efficacy for performing in job interviews (Matijaš & Maslić Seršić, 2021; Petruzziello et al., 2022). Since jobseekers engage in a range of job search behaviours, often over a long period of time, understanding any differences in self-efficacy for passive and active job search behaviours, interviews, and other components of the job search process is important to both university students, graduates, researchers, and practitioners.

The findings in Study 3 demonstrate the utility of career construction theory's adaptation model (Savickas, 2005, 2013) to explain the identification of, and enactment of, career adaptive behaviours that university students use to develop their employability. The findings demonstrated that students' decisions to engage in career adaptive behaviours, such as internships, volunteering, mentoring, and networking were influenced by the dimension of career adaptability evident in their narrative. In a meta-analysis of quantitative career adaptability research, Rudolph, Lavigne, Katz, et al. (2017) provided evidence of the differential relations between career adaptability dimensions and adaptation results. Spurk et al. (2020) demonstrated that career adaptability and career adaptive behaviours develop conjointly over time.

Study 3 found that students' selection of career adaptive behaviours tended to preference activities more aligned with the development of human and social capital than with other forms of capital—such as psychological, identity, and cultural capital—which are perhaps less visible and more abstract. Jackson and Bridgstock (2021) found that graduates perceived their engagement in extra-curricular activities at university as more helpful in developing their employability than it was in gaining employment. The authors note that the

lack of strong relations between engagement in extra-curricular activities and employment outcomes is a “disappointing reality for both institutions and individual graduates” (p. 734). It is important to emphasise that career adaptive behaviours are developmental activities (Lent & Brown, 2013) that are distal antecedents to employment outcomes. It is also likely that individuals would attribute gaining employment to many different factors. For example, finding a job through personal networks, possessing the right qualifications and previous work experience, or performing well in an interview. van Hooft et al. (2021) notes that any single factor is going to have a small effect on employment outcomes because there are many factors that predict employment outcomes.

The results from the two studies point to opportunities for research to evaluate how engagement in career adaptive behaviours has an impact on individuals’ development of employability, and that any study seeking to examine relations between career adaptive behaviours and employment needs to consider the mediating role of proximal antecedents of employment, such as job search behaviour.

6.1.4 Adaptation

The career adaptive behaviours studied in this Thesis are developmental in relation to employability and lead to non-employment outcomes, compared with job search behaviours that are directed toward the goal of obtaining employment. The measures of adaptation in this Thesis included employment outcomes (Study 1) and career identity achievement (Study 2). I will now outline the theoretical implications of these two studies.

The expectation in higher education is that by embedding the development of generic skills in university degree courses, graduates will be more likely to meet the skill requirement of employers, and therefore obtain employment. Study 1 examined graduates’ perceptions of their human capital through the testing of relations between graduate skills and qualities, and employment outcomes. The CEQ subscales of graduate skills and qualities were found to

have good psychometric properties and predicted overall course satisfaction. However, the results found negligible relations between graduate skills and qualities and employment outcomes. Other research has found that external factors (i.e., perceived labour market opportunities) have larger effects than internal factors (i.e., perceptions of skills) on self-perceived employability (Ergün & Şeşen, 2021; Vargas et al., 2018). In addition, recent meta-analytic research has found small effects of core self-evaluations (judgement of one's capabilities) on job search intensity (r_c = .07) and employment outcomes (r_c = .05), but stronger effects of core self-evaluations on job search quality (r_c = .26) and employment quality (r_c = .18) (van Hooft et al., 2021). The CEQ scales of graduate skills and graduate qualities are likely to be measuring aspects of graduates' core self-evaluations. The career adaptation model (Savickas, 2013) positions core self-evaluations as adaptivity, which is a distal antecedent of adaptation. Together, these findings indicate that governments and universities are focusing on the measurement of factors that contribute in some way to employability but are too distant from employment outcomes to be significantly influential.

Study 2 found that dispositional employability, career adaptability, and job search self-efficacy predicted categories of career identity achievement. The significant predictor variables are consistent with Marcia's (1966) definitions of the four career identity categories. Consistent with the definition of diffuse career identity as representing individuals who are unconcerned about having not made a career decision, the multinomial regression found that students in this career identity category had lower odds ratios for DME Career Motivation and CFI-9 Career Optimism and higher odds ratios for CFI-9 Career Adaptability. Those students who were concerned about having not made a career decision (i.e., moratorium career identity) also had low odds ratios for DME Career Motivation and CFI-9 Career Optimism but had higher odds ratios for DME Openness to Change at Work. Those with a foreclosed career identity had low odds ratios for CFI-9 Perceived Knowledge, in

addition to low odds ratios for DME Career Motivation and CFI-9 Career Optimism. Thus, indicating that the career choice was made in the absence of knowledge of career options open to the individual. The results from Study 2 provides further evidence to the contribution that dispositional employability makes to supporting individuals' proactive engagement in career adaptive behaviours.

6.1.5 Summary of Theoretical Findings

The findings in this Thesis demonstrate the significance of dispositional employability as an antecedent to important psychosocial processes and career outcomes. Furthermore, career construction theory (Savickas, 2005, 2013; Savickas & Porfeli, 2012) can help explain how dispositional employability, via adaptability resources and adapting responses (career adaptive behaviour), contributes to adaptation outcomes.

Based on the empirical evidence of the studies presented in this Thesis, and an aim of this doctoral research to inform the design of curricula and extra-curricular interventions to enhance graduate employability, I have developed a process model for developing graduate employability. This model has applications in universities to design of scalable, yet personalised, programs to enhance graduate employability.

6.2 A Process Model for Developing Graduate Employability

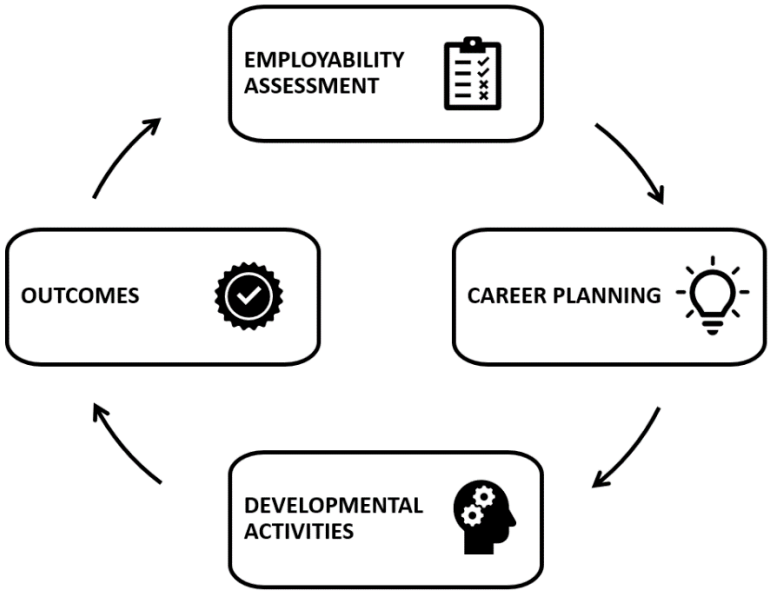
The use of "employability awards" emerged over the past decade to support university students develop their employability (Bennett et al., 2017). Employability awards usually involve students engaging in learning activities inside the curriculum and outside through participation in extra-curricular activities (Watson, 2011) and either focus on the completion of endorsed activities (e.g., internships, volunteering) or the development of skills (Russell & Kay, 2019). Watson (2011) notes that employability awards are a method of engaging students in the *process* of developing their employability, with the *product* of employability awards being a transcript or certificate of completion. What appears to be lacking in the

design of employability awards is consideration of how to identify which aspects of an individual's employability could be further developed. For example, the developmental needs of a student with an achieved career identity status who has a part-time job related to their field of study is going to be different to the needs of a student with a moratorium career identity status with no employment experience.

Informed by the integrative career counselling model (Rottinghaus & Eshelman, 2015) and the critical ingredients of effective career interventions (Brown & Ryan Krane, 2000; Brown et al., 2003; Whiston et al., 2017), this proposed model is a high-level process that can be used to design individual and small group interventions, and institutional large-scale employability programs. This model presented in Figure 6 shows the conceptual diagram of the proposed developmental process, commencing with employability assessment, career planning, engagement in developmental activities, and reflection on employability outcomes. The process can continue through re-assessment of employability and choosing new or additional career adaptive behaviours to engage in.

Figure 6

Developing Graduate Employability Process Model



6.2.1 Employability Assessment

To commence the process for facilitating students to design a personalised employability development program, students would be invited to register for the program. An induction workshop or online resources is recommended to explain to students how the program would work and the expected benefits for participation. Students would then be invited to complete a battery of measures. The measures of dispositional employability, career adaptability, job search self-efficacy, and career identity, examined in Study 2, can be used for this purpose.

Once students have completed the assessment and printed a copy of their report, they would move into the next phase of career planning—to be debriefed on their employability assessment—and to commence the identification of developmental activities that will address potential areas to enhance their employability. This process will be described in the next section, 6.2.2.

For educators and career practitioners, an alternative way of using this process is to identify the employability development needs of groups of students. An educator could ask their class to complete the measures, and the overall results for the class could be examined to identify appropriate interventions that support students' development of their employability. If, for example, the results for a class indicate low levels of career optimism, an intervention could be designed that assists students to boost their optimism. Furthermore, all measures, or individual scales, could also be used as a pre- and post-test measures to evaluate the effectiveness of career interventions. Similarly, in individual career counselling sessions, the measures could provide the practitioner and client with data to identify appropriate areas of development for the client, such as increasing job search self-efficacy, or for a student who is low on openness to change, engage in career exploration activities to reduce the risk associated with fixation on a specific career goal (Pryor & Bright, 2011).

6.2.2 Career Planning

Having completed the employability assessment, students should then attend a career planning workshop or class. In this workshop, a career development practitioner or educator would commence with providing students information about the battery of tests they completed and instructions on interpretation of their scores. Whiston et al. (2017) found that group test interpretation to be moderately effective in supporting career decisions. Next, the career development practitioner facilitates a process for students to identify strategies to further develop their employability. Students could be provided with a list of activities and programs that the university delivers, and small group discussions used to encourage students to identify which of those activities could support their employability development. From here, students should be encouraged to write down their employability development strategy, or where appropriate, sign up to programs and activities they identified. For classes in the curriculum, an employability plan or reflective essay could be used as an assessment task,

motivating students to engage more deeply in the activity, and benefitting from feedback from the educator. An example of this approach is described in Brown, Healy, Lexis, et al. (2019). Written activities are a critical ingredient in successful career choice interventions, particularly when students are required to write goals identifying actions to take (Brown et al., 2003).

6.2.3 Developmental Activities

In supporting students to select activities to complete in their personalised employability award program, it is important to provide students with information as to the expected benefits from engagement in career adaptive behaviours. It should be emphasised that these activities, in most instances, do not directly lead to gaining employment, but they can support development of employability, increased knowledge about potential career options, building social networks, and increasing confidence to search for and obtain employment. Table 19 lists three categories of career adaptive behaviours that enhance human, social and psychological capital; facilitate engagement in career exploration; and increase confidence. I will highlight some of the common developmental activities offered within universities associated with each of the three categories.

Dispositional employability includes dimensions of human and social capital (Fugate et al., 2004), and as I have argued in this Thesis, psychological capital. As demonstrated in Study 3 and in previous research (Brown, Healy, Lexis, et al., 2019), the activities that students identify to enhance their employability—such as internships, volunteering, part-time employment, and networking—serve to develop their human and social capital. Psychological capital is an important component of employability and can be enhanced through careers and employability learning workshops.

There is support in the literature that extra-curricular activities and employability-focused curricula supports the development of human, social, and psychological capital. For

example, internships have been found to enhance career resources and employability through changes in career identity, self-efficacy, competencies, and skills (Inceoglu et al., 2019). Volunteering has been found to develop self-confidence, leadership and interpersonal skills (Clark et al., 2015), and on-campus employer events can help students to develop social networks (Bridgstock, 2019; Bridgstock & Jackson, 2019).

Psychological capital interventions have been studied over the past 15 years and have been found to increase psychological capital, although the effect sizes are modest (Salanova & Ortega-Maldonado, 2019). Interventions tend to involve use of workshops focused on tasks to increase hope, optimism, resilience, and efficacy (Dello Russo & Stoykova, 2015; Luthans et al., 2006; Salanova & Ortega-Maldonado, 2019). Careers and employability learning workshops have been found to increase hope and optimism (Strauss et al., 2012; Taber & Blankemeyer, 2015), and self-efficacy (Liu et al., 2014).

Career exploration activities are an important set of career adaptive behaviours that involve information-gathering about the environment and the self. These activities can increase occupational knowledge, optimism, curiosity, and personal agency (Jiang et al., 2019; Rottinghaus et al., 2015). Jiang et al. (2019) notes that career exploration involves different tasks across the lifespan. For young adults in universities, career exploration is about developing a career identity, firming occupation choices, and making the transition from university to work. Established adults in universities might use career exploration for making occupational and job changes. Praskova et al. (2015a) found that young adults who engaged more in career exploration and career planning activities had clearer career identities, which led to reduced career uncertainty, anxiety, and career distress. However, Praskova and colleagues found that ongoing career exploration has the potential to increase uncertainty, stress, and anxiety for those without clear a career identity. These findings emphasise the importance for university students to make informed choices about the type of career

exploration activities that would be beneficial. Activities that are commonly delivered by university careers services or included in the curriculum that aid in career exploration include: attending guest talks by industry professionals, career fairs, careers and employability learning in the curriculum (Bridgstock, Grant-Iramu, et al., 2019; Brown, Healy, McCredie, et al., 2019), career counselling, and engaging in internships and volunteering.

Table 19

Employability Assessment, Identification of Developmental Activities through Career Planning, and Potential Outcomes

Employability Assessment	**Developmental Activities**	**Outcomes**
Adaptivity Dispositional Measure of Employability (Fugate & Kinicki, 2008) Core self-evaluations	Activities to enhance human, social, and psychological capital: • Internships • Volunteering • Part-time employment • Networking • Psychological Capital Interventions	• Course and graduate skills satisfaction (e.g., CEQ) • Employability capital • Perceived employability
Adaptability CFI-R; Rottinghaus et al. (2012) CFI-9; McIlveen et al. (2012) CAAS; (Savickas & Porfeli, 2012)	Career exploration activities: • Attending industry talks • Attending career fairs • Internships • Volunteering • Field trips • Careers and employability learning	• Career identity achievement • Perceived employability • Engagement in career adaptive behaviours • Job search behaviour
Adapting Job Search Self-Efficacy (Saks et al., 2015) Student Career Construction Inventory; (Savickas et al., 2018) Career Decision Making Self-Efficacy	Activities to increase confidence: • Activities listed in the adaptivity row • Career development workshops (e.g., resume writing, job search strategies, interviews) • Applying for internships, volunteering opportunities, part-time employment • Making decisions about study (e.g., Selecting majors and electives, applying for postgraduate courses) • Mentoring programs • Career counselling (group or individual) • Career exploration	• Increased score on measures of adapting • Job search behaviour • Course satisfaction • Career identity achievement

Activities to increase confidence include activities listed in the first two categories of career adaptive behaviours, as well as those known to increase career adaptability and adaptation outcomes. Careers and employability learning (e.g., resume writing, job search strategies, interviews), support increasing students' job search self-efficacy, and engagement in job search behaviour. Applying for internships, volunteering opportunities, part-time employment are strategies to engage students in those activities, and in addition, aid confidence through known sources of self-efficacy (e.g., mastery experiences, feedback) (Lent et al., 2017). Other activities, such as making decisions about study (e.g., selecting majors and electives, applying for postgraduate courses), mentoring programs, and career counselling (group or individual), can support students' career decidedness and career identity achievement.

6.2.4 Reflection on Employability Outcomes

The final part of the process model to develop employability is a reflection on employability outcomes. Ideally, this process should be facilitated by a career development practitioner or educator; however, a well-designed workbook or assignment could step students through the reflection process, particularly when paired with personalised feedback (Brown et al., 2003).

The first part of the reflection is for students to write descriptions of the activities completed and identify key knowledge, skills, and other learning outcomes from those activities. This qualitative reflection on gains from the experience is important for students to articulate this value in various parts of the recruitment process (e.g., including descriptions of extra-curricular activities in resumes, responding to behavioural questions in job interviews). Tomasson Goodwin et al. (2019) taught university students how to articulate employability skills using the STAR technique and found that the experimental group were better able to articulate employability skills than the control group. To extend this reflection, workshop

activities where students share their insights into learning gains from the development activities can increase social learning, which is a source of self-efficacy (Lent et al., 2017).

Next, a quantitative component can be added. Students could complete the measures outlined in the section on Employability Assessment. A facilitated discussion will assist students to identify the subscales where scores increased or decreased after completing the development activities, and to understand the significance of those changes in terms of magnitude and direction, and consideration of the attribution of those changes, such as increased knowledge resulting in more realistic self-perceptions of employability. Other employability outcome measures that could be utilised include self-perceived employability (Rothwell et al., 2008; Rothwell et al., 2009), employability capital (Tomlinson et al., 2021), and engagement in career adaptive behaviours (Savickas et al., 2018).

Through the reflection (using qualitative and quantitative data) on their engagement in development activities, students will be able to make further decisions about engagement in lifelong learning processes to continue the development of employability and achievement and maintenance of employment.

6.2.5 Summary of the Process Model

The process model for developing graduate employability has been designed as a creative output based on the empirical evidence from the three studies in this Thesis. This model provides educators and career development practitioners with a conceptual process to inform the design of employability awards and careers and employability learning activities within the curriculum. The model advises that the first step is for students to complete a battery of employability assessments, such as the measures investigated in Study 2. Next, students are debriefed on their assessment results and supported to engage in a career planning process to identify developmental activities they will complete in the third part of the model. After students have engaged in developmental activities, they are supported to

reflect on the outcomes of those activities and may take the employability assessments again to examine any changes in scores. The process can continue through the cycle as students identify other aspects of their employability they wish to further enhance.

6.3 Limitation of the Current Research

The manuscripts from the three studies in this Thesis identified limitations. These limitations are included here and expanded on within the context of the overall findings. Ideas for addressing some of the limitations are explored in the Recommendations for Future Research, Practice, and Policy section.

Study 1 analysed a large sample of data from the Australian Government's national Graduate Outcome Survey. A limitation to this study is the relatively short period of time after graduation which the survey is taken (i.e., four months), particularly given that 11.5% were unemployed and 11.4% were not in the labour market at the time of the survey. These graduates may have been searching for work that is substantively relevant to their qualification. For many decades it has been common for many Australian university graduates to travel to Europe or North America for one or two years after completing studies. The GOS does not collect this data, but this reason might explain some of the proportion of graduates not in the labour market. Furthermore, a combined total of 38.5% reported that their qualification was "not at all important" or "not important" for their employment at the time of the survey. Thus, it is important to read the present findings with the caveat that the respondents may not have been in a personally suitable position. Moreover, the cross-sectional design means that it is not possible to identify causal pathways between variables. For example, it could be that employed graduates are more satisfied with their course experience than unemployed graduates because they achieved a desirable outcome from their course. The GOS survey collects a large amount of data from graduates. Study 1 only examined a small number of variables; therefore, it is possible that other variables in the

survey might influence relations between graduates' satisfaction with skills and qualities and employment outcomes.

As a cross-sectional design, Study 2 has limitations in testing the direction of relations between variables; however, the findings are consistent with the meta-analysis of career adaptability research (Rudolph, Lavigne, Katz, et al., 2017). In addition, other research indicates that stronger relations between job search self-efficacy and outcomes occur in cross-sectional research designs in comparison to longitudinal designs (Kim et al., 2019). Therefore, further investigations applying a longitudinal research design will improve the testing of relations between dispositional employability and components of the career adaptation model. The participants were recruited from one university and were disproportionately representative of the student population, with a greater number of female participants and those studying in health science courses. Future research should recruit participants from multiple institutions and fields of study.

Study 3 analysed the transcripts from seven focus group discussions with ($N = 25$) university students. Participants were recruited from an employability award program. Although the researchers ceased running additional focus group sessions once data saturation was achieved, analysis of participants demographic profiles was not conducted. The participants were over-represented by international students and under-represented by students who had been involved in several extra-curricular activities. In addition, the content analysis approach was heavily informed by theory. A different qualitative research approach may have identified new insights and interpretations of students' experiences.

As this Thesis was designed as a research portfolio, the three studies, although related, were not designed to address one contained set of research questions. The findings make valuable contributions to the literature but were limited in being able to fully assess the application of dispositional employability's relations with the career adaptation model.

It is important to reflect on the potential impact and limitation of the findings of this Thesis in relation to the current contextual factor of the COVID-19 global pandemic, as two out of the three studies were conducted prior to 2020. In respect to Study 1, future research will be able to conduct a replication of this study with data collected during and after the pandemic. Any changes to measures of the CEQ scales might be influenced by the shift to online learning during periods of lockdown and would need to be controlled for. Study 2 was conducted during 2020. The university where the study was conducted is based in a large metropolitan city that was in lockdown for part of the time data was collected for both studies. As (Akkermans et al., 2020) notes, the pandemic is for many people a career shock that will impact the interplay between contextual and individual factors. For university students this could result in reconsideration of career plans, or delays to making the transition from study to employment. The DME (Fugate & Kinicki, 2008) measured factors that are relatively stable, so it is unlikely this particular career shock would impact this measure. Indeed, some factors, such as resilience and optimism may serve as protective factors that enable individuals to adapt to the impacts of the pandemic. However, it is plausible that other measures like career adaptability and job search self-efficacy could be impacted by decreased employment opportunities in some industries. (Akkermans et al., 2020) argue that a career shock can have positive outcomes for some and negative outcomes for others. In Study 3, the focus groups were conducted at the end of 2019. Students noted feelings of concern for their future career and transition from study to employment. It is very possible that these emotions would be heightened during the pandemic and access to extra-curricular activities would have been impacted by lockdown health orders.

6.4 Recommendations for Future Research, Practice, and Policy

6.4.1 Future Research

Given the support in Study 2 for DME as an indicator of adaptivity and the relations with indicators of adaptability, adapting, and adaptation, future research designs should focus on the relations between dispositional employability and other measures of adaptability (e.g., Maggiori et al., 2015; Savickas & Porfeli, 2012), engagement in career adaptive behaviours, and other outcomes, such as career satisfaction and self-perceived employability. In addition, research that builds on previous studies showing the relations between dispositional employability and employment (e.g., McArdle et al., 2007; Tomas & Maslić Seršić, 2017) is needed for university students and graduates. As per recommendation from Rudolph and colleagues (Rudolph, Lavigne, Katz, et al., 2017; Rudolph, Lavigne, & Zacher, 2017), longitudinal studies are required to test the direction of relations among the variables in the career adaptation model. Longitudinal data is also important to test whether the DME does in fact measure constructs that represent dispositions. Dispositional traits are relatively stable, so an expectation would be minimal changes in scores on the DME subscales over time.

The finding in Study 2 that DME, CFI-9 and JSSE subscales predict membership of career identity categories is one that requires further investigation. For universities, understanding how careers and employability interventions support students' development of career identity is important. For university students who are engaged in vocational developmental tasks and transitions from university to work, evidence-based advice that supports these career construction processes would give them confidence that the effort to engage in learning activities and experiences is a worthwhile investment. Future research should also recruit participants from a broader range of academic disciplines to enable comparison between programs offering training for a specific vocational pathway (such as

medicine or engineering) with generalist programs that have no pre-determined vocational outcome.

The Australian Government, through its Graduate Outcome Survey collects graduates' responses to a range of questions about employment obtained, job search methods, perceptions of match between qualifications and the requirements of the job obtained, classification of the job, and industry sector. Future research should examine the quality of jobs obtained by graduates and examine factors pertaining to the influence that field of study has on obtaining graduate-level employment. Studies in other countries have identified important relations between demographic variables and obtainment of employment, quality of jobs, and job search method (Álvarez-González et al., 2017; Okay-Somerville & Scholarios, 2021). Study 1 found significant relations between the CEQ subscales and employment outcomes, although due to the very large data set the effect size was close to zero. Previous research using the GOS (Jackson, 2014, 2016) have identified the contribution of categorical variables such as field of study, labour market region, and individual demographic variables such as gender, age, disability status to achievement of employment outcomes. Future research should consider developing structural models to test mediational relations between variables (such as graduate skills) and outcomes (employment, quality of employment). These models should also use invariance testing to determine if the models fit the data across different contextual factors, such as field of study, university groupings, labour market regions, gender, and other demographic factors.

Study 3 offers qualitative insights into students' motivations and decisions regarding engagement in career adaptive behaviours. Future research should track the changes in career adaptability as students participate in employability award programs and other extra-curricular activities during their time at university. Future studies could use a mixed method design to ensure sampling participants for qualitative research from participants with different

career adaptability profiles to further interrogate the interaction between career adaptability and adapting responses. In addition, replication of this study within a different institution and with students with a broader range of demographic and cultural backgrounds is required.

6.4.2 Recommendations for Practice

The findings from this research have practical implications on how higher education institutions design institutional employability strategies. Universities need to move beyond a focus on developing human capital to include curriculum and co-curricular interventions that enhance other forms of capital including social, psychological, and identity. I described a process model for developing graduate employability in section 6.2 as one application of the findings from the Thesis. I will now identify additional recommendations for practice concerning the development of human, social, and psychological capital.

A significant amount of work has been undertaken, particularly in Australia, to embed graduate attributes in the curriculum as the principle means of developing students human capital (Hammer et al., 2021); however, the findings in Study 1 show that graduates' perceptions of the skills and qualities developed in their course has little connection with obtaining employment after graduating. Despite this, the common practice of employers requiring job applicants to provide evidence of their generic skills signifies the importance that graduate attributes could have in graduates' future job applications. Experimental research has shown that students who are taught a common framework for responding to interview questions were better able to articulate their generic skills than students in the control group (Tomasson Goodwin et al., 2019). The findings from Study 1 do not rule out the possibility that graduate skills and qualities contribute to employment outcomes through some other mechanism, such as metacognitive processes (Yorke & Knight, 2004), whereby graduates who have greater awareness (and evidence) of their knowledge, skills, and other attributes, could be more likely to be successful in meeting an employer's requirements

through competitive recruitment processes. It is recommended that universities include opportunities in the curriculum for students to learn how to identify and articulate their generic skills, so that they are better able to provide evidence of development of their human capital to potential employers.

Other strategies within the agency of universities can be utilised to support students to expand their social capital. As Bridgstock (2017) argues, universities are well placed to support the social capital development of students through links with industry and alumni networks, which can be operationalised through industry-linked experiential learning. For example, Brown, Healy, Lexis, et al. (2019) designed a learning activity for health science students that supported students to connect with industry professionals and gain confidence in using social media for expanding their networks.

Finally, although psychological capital is an area that may seem somewhat challenging to address through the curriculum, there is sufficient empirical evidence of interventions that increase hope, efficacy, resilience, and optimism (Dello Russo & Stoykova, 2015; Luthans et al., 2006; Salanova & Ortega-Maldonado, 2019), which could be incorporated into careers and employability learning in the curriculum.

6.4.3 Recommendations for Policy

The Australian Government measures institutional level employability via aggregated employment outcomes of institutions' graduates. This approach fails to recognise the distinction between the outcomes of learning and teaching in relation to the development of employability, graduates' job search behaviours, and the opportunities available in the labour market. Through the research findings from this Thesis and the literature reviewed, several recommendations for government and institutional policies are presented, including the development of a composite measure of employment outcomes, a definition of job quality, and evaluation of teaching and learning impacts on employability.

The first recommendation for policy is that the Australian Government develop a composite measure of outcomes that control for individual, institutional, and labour market variables. At present, an Australian Government website ComparED (QILT, 2021) uses data from the GOS and CEQ surveys to provide a mechanism for prospective university students to compare two or more universities, or two or more courses, on measures of full-time and total employment, satisfaction with graduate skills and teaching, further education rates, and median salary. This simplistic reporting of aggregated institutional data provides little insight into the effectiveness of individual institutions' support of the development of graduates' employability and consequent employment outcomes. Individual and contextual factors are not controlled in the comparison of the success and satisfaction outcomes within- and between-institutions. Individual factors such as disability, socioeconomic status, gender, age, nationality, and field of study are well established in the literature as contributing to employment outcomes (e.g., González-Romá et al., 2018; Jackson, 2014; van Hooft et al., 2021). As a hypothetical example, compare two universities teaching the same course in the same labour market. University A is an old, elite university that has high entry requirements and a high proportion of students from high socioeconomic backgrounds. University B is a new university that has lower entry requirements and a focus on widening participation of under-represented students. If the quality of teaching at both universities was identical, it is unlikely that the employment outcomes of their graduates would also be equal, due to the known barriers to employment of some individual factors. Therefore, this recommendation is to develop a composite measure, such as a star rating system, that controls for variables in a way that fair comparisons of courses and institutions can be made.

The second recommendation is for governments and institutions to define a measure of job quality. Previous studies have defined job quality indicators to include objective data (e.g., salary, hierarchical level) and subjective measures (e.g., job satisfaction, skill

utilisation, work-life balance) (González-Romá et al., 2018; Lažetić, 2020). The GOS currently collects data on graduates' occupation, salary, hours of work, and a measure of subjective job quality known as the perceived over qualification scale (Social Research Centre, 2020). These factors could be incorporated into a person-centred analysis (Woo et al., 2018) to identify categories of graduate job quality. Blustein et al. (2020) applied a person-centred analysis to identify profiles of workers' job quality using measures of decent work and precarious employment.

The third recommendation is to measure the impact of university teaching and support programs on outcomes directly related to employability, such as job search self-efficacy, career identity, and self-perceived employability. In addition, universities should be evaluating effectiveness of interventions and tracking development of employability longitudinally from commencement of enrolment through to graduation.

6.5 Conclusion

This Thesis has presented empirical evidence to better inform how universities may develop strategies to support the development of graduate employability. Dispositional employability (Fugate & Kinicki, 2008; Fugate et al., 2004) is a psychosocial process that facilitates the enactment of proactive behaviours directed toward career self-management. Dispositional employability has been under-researched in the past as higher education has focused on addressing the gaps between the employability skills possessed by students and the skills required by employers. The empirical evidence presented in this Thesis has identified that the relations between skills and employment outcomes is negligible. Instead, universities should focus on supporting students to understand their strengths and weaknesses in relation to employability-related thoughts and behaviours, and to encourage students to engage in career adaptive behaviours to enhance their employability.

Career construction theory's career adaptation model (Savickas & Porfeli, 2012) was found to be an appropriate framework for future research to investigate how dispositional employability enables individuals to achieve employment outcomes through the chain of effects process of adaptivity→adaptability→adapting→adaptation. Furthermore, common activities that students engage in to develop their employability, such as volunteering and work experience, are important in developing the human, social, and psychological capital dimensions of dispositional employability; however, these activities are distal antecedents of employment outcomes. In supporting students to achieve employment outcomes, universities should continue to facilitate students' development of employability, but also increase support for students to develop effective job search strategies and engagement in job search behaviours to transition from study into quality graduate jobs.

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