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**Recent Tertiary Graduates' Career
Attitudes, Career Adaptability and Career
Self-management Behaviours: Focus on
Continuity in a Fragmented Employment
Context**

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2010

**Recent Tertiary Graduates' Career Attitudes,
Career Adaptability and Career Self-
management Behaviours: Focus on Continuity in
a Fragmented Employment Context**

A thesis presented in partial fulfilment of the requirements for
the degree of

MASTER OF MANAGEMENT

in

Human Resource Management

at Massey University, Palmerston North,

New Zealand

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2010

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Abstract

With the traditional one-way hierarchical organization career path being replaced with non-linear or multi-directional career paths, how an individual could maintain continuous career development within a dynamic and discontinued employment context is a consistent theme of this thesis. Through an internet-mediated quantitative research method among recent alumni of Massey University, this current study explores three core aspects of recent tertiary graduates' career development: the extent to which they hold new career attitudes (protean and boundaryless attitudes), endorse career adaptability and implement career self-management behaviours. By also considering these graduates' gender, age range, ethnicity, highest qualification, the college from which they graduated and location after graduation, this New Zealand based empirical study questions if such demographic elements could affect graduates' career attitudes, career adaptability and career self-management behaviours.

The findings reveal that although recent tertiary graduates' levels of endorsement of new career attitudes and career adaptability has increased to a considerable extent, these graduates are not practising career self-management behaviours to a similar high level. Demographic elements are implied to be an issue when considering the above three aspects of their career development, but are evidently not crucial; and are still worth more investigation in future empirical career studies. The practical value of this study lies in its implications for both individual graduates and institutions to maintain congruence in both attitudes and actions when developing individual careers.

Acknowledgements

This thesis would not have been possible unless many people had contributed in a number of ways.

I am heartily thankful to my first supervisor, Associate Professor Paul Toulson, whose guidance, encouragement and support from the initial to the final stage enabled me to develop an understanding of not only the subject, but also the research process. My second supervisor, Lecturer Beth Tootell, provided timely advice during the data collection period, and made available her support during the data analysis process.

I am grateful to the College of Business and Alumni Office of Massey University, Palmerston North. Without their interest and co-operation, an internet-mediated survey could not have been distributed to over 3,000 Massey graduates.

It is a pleasure to thank those who helped and supported me throughout the whole study. Dr Robin Mason who conducted research in the same area in Management Department offered valuable opinions on the design of the questionnaire. Dr Debbie Leader, Tutor of the Statistic Department, provided much consultancy in the application of SPSS. Technician Zaloum Bryden helped with computer support. Special thanks go to John Wyatt, who had worked at the Massey Student Learning Centre, for the huge time he invested in proof reading all my drafts.

The acknowledgements would not complete without mentioning my dear family and friends, both here in New Zealand and afar in my home country. It is they who motivated me to start this journey, and have accompanied me through all difficulties faced.

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Chapter 1 - Introduction

1.1 The Fragmented Career Context of Recent Tertiary Graduates

Traditionally, individuals' careers are mainly bonded to organizations, perceived as an upward hierarchical path, an occupational structure or routine within a 'paternalism' or 'marital' employment relationship between organizations and individuals (Arthur, Hall, & Lawrence, 1989). However, in the 21st Century, with changing economic situations transforming organizational forms and employment relations, and the increasing flexible workforce in the workplace, have all contributed to bring about the growing existence of career transformations of individuals' career paths (Peiperl, 2000). With looser interpretations of individual careers and uncertain career paths for almost any career pursuer, continuous individual career development in an increasingly discontinuous employment context has emerged as an even more important issue (Walton & Mallon, 2004).

There are several major characteristics that make contemporary career contexts a process of uncertain progression or fragmented canvass for individuals. The first characteristic is the substantially altered workplaces and work forms in contemporary economic situations. It is evident that after World War II, the world witnessed the significance of large corporations as the main employers of the working force, especially in Western countries (Jones & Dunn, 2007). However, along with the economic changes since the 1970s, traditional large organizations have been affected profoundly, due to advanced technologies, globalization and enhanced management, and have become more flattened rather than hierarchical in form, and less bureaucratic in management (Gunz, Evans, & Jalland, 2000). Alongside large companies, presently a variety of corporations of different sizes provide employment, and non-standard work forms (part-time, flexible contracts and temporary work) have now emerged, especially, during the waves of depression after 1990s (Kalleberg, 2000).

Along with the changing workplaces, the transformation of employment relations is the second characteristic that affects an individual's career context. Job security for an entire career life in the same company is an irretrievable legend of the last generation (Arthur & Rousseau, 1996). Instead of a long-term commitment between an organization and an employee, the employment relationship has become more of a psychological contract, based on the convergence of the company's goal and individuals' personal and professional development short-term needs, perhaps midterm goals at the most (Peiperl, 2000). As such, with decreasing job security and increasing employment mobility, the traditional linear upward career pattern within organizations has been enlarged to notions of multi-linear, spiral or even 'kaleidoscope' career paths (Baruch, 2004).

A third characteristic is the growing number of the flexible workforce which enhances the dynamic nature of the labor market. Generation Y (the generation born after 1980), having commenced their careers, females returning from childcare and other family responsibilities, retired people who would like to resume working, minorities and new immigrants who are relatively vulnerable on the job markets, may all belong to this flexible workforce (Cascio, 2008; Donovan, Hodgson, Scanlon, & Whitelegg, 2005; Ferber & Waldfogel, 1998; Fouad & Bynner, 2008; Hite & McDonald, 2003; Montana & Petit, 2008). This rising flexible workforce, composed with voluntary or involuntary part-time, temporary and contingent workers, has provided employers with a more flexible, but similarly talented pool of human resources, needing less responsibility and financial cost to train and develop such a resource (Briscoe & Hall, 2006a). On the Pacific Rim, research findings focusing on casual employment show that the proportion of part time employees in Australia from 1980 to 2003 increased by 12%, from 16% to 28% (Bardoel, Morgan, & Santos, 2007; Peck & Theodore, 2007). The trend of the increasing number of flexible workers in New Zealand is the same, although there are relatively tight restrictions on casual work in New Zealand, when compared with Australia and many other countries in the world (Kimmel, 2006). Thus, it is argued that the growing of the flexible workforce implies less employment commitment in the workplace and more mobility among non-standard employees, and, consequently, this makes an individual's career context more discontinuous (Doyle, 2000).

1.2 Three Core Aspects to Obtain Continuous Career Development

From the above transformation of career contexts, the question of how a recent tertiary graduate could obtain continuous career development in such a fragmented career context has drawn much attention in contemporary career studies (Baruch, 2004; Bloch, 2005; Quigley & Tymon, Jr., 2006; Sargent & Domberger, 2007; Bradley & Devadason, 2008). Since one's career development is no longer a continuous upward linear path, but is unique to every career pursuer, there can be no panacea for all graduates. However, useful strategies that could be helpful to anyone who is struggling for continuous career development are worth investigating. Among them, individuals' career attitudes, career adaptability and career self-management behaviors are argued here as being three significant aspects.

Career attitude is a self-understanding of a person's career and work, which determines their definition of their work life, and defines the crucial criteria of a personalized career success (Erdogan, Kraimer, & Liden, 2004; Ng, Eby, Sorensen, & Feldman, 2005). Since the interpretation of the meaning of career is looser in current career contexts, individuals' emphasis on their careers has shifted from the objective conditions of careers to their subjective experiences (Walton & Mallon, 2004). As a psychological aspect of career, a person's career attitudes can reflect the unique value of a chosen pursuit or process of their work life. Also, such career attitudes could predict their career choices and how successful they might be in their chosen career fields. Moreover, it is found that positive career attitudes at work may influence career altitude, and negative career attitudes can undoubtedly hurt a person's career development (Douglas & Shepherd, 2002). Thus, developing graduates' career attitudes is worthwhile for their continuous career development, no matter what career context they might occupy.

Career adaptability is the second aspect that plays an important role in a graduate's continuous career development. Placing an emphasis on deciding career changes without great difficulty in meeting career circumstances in transition, career adaptability has been studied as an integrative construct which may lead to a more meaningful and

efficient career life (Ito & Brotheridge, 2005). Combined with a person's career attitudes, career adaptability is more than just the ability to cope. As it can be learnt through vocational developmental activities, career adaptability is becoming the one of the core elements in more and more career development studies with a view to increase career continuity (Creed, Fallon, & Hood, 2008; Garofano & Salas, 2005; Goodman, 1994; Savickas, 1997).

A third aspect that could strongly influence the outcome of a graduate's career development is his or her career self-management behaviors. In the recent career literature dominated by the transformation of any career pursuer's career path, career self-management has been viewed as the ultimate personal responsibility for their own career happiness (Chiaburu, Baker, & Pitariu, 2006; De Vos, Dewettinck, & Buyens, 2008; King, 2004; Quigley & Tymon, Jr., 2006). Due to its enhancement to the person's control over their career development, the implementation of career self-management behaviors allows them a more certain capability to obtain a successful career future.

1.3 Graduates' Career – Research Interests and Questions

Attempts to explore the current status of recent tertiary graduates' career development with regard to their transition from school to work have made valuable contributions to the appreciation of these new career pursuers. For example, Coulon's (2002) study on recent New Zealand tertiary graduates and the labor market, and Dupuis, Inkson and McLaren's (2005) research on career pathways of New Zealand young people have both provided insights to this subject. This current empirical study, however, specifically emphasizes three central elements of recent tertiary graduates' career development: their career attitudes, career adaptability and career self-management behaviors. The first aim of this thesis is to explore the extent to which recent tertiary graduates hold different career attitudes, how far they have endorsed career adaptability, and how successfully they have implemented career self-management behaviors.

Further, another issue explored relevant to these individuals' career development is how demographic elements can influence their career attitudes, career adaptability and career self-management behaviors. Tertiary graduates' demographic diversity has been a characteristic in New Zealand career studies for over a decade, but has been viewed as more of a research consideration when designing study approaches or collecting data, rather than matching effects to results. Demographic elements such as gender, age range, ethnicity, qualification, college from which they have graduated, and location after graduation have not been highlighted in the research findings of previous New Zealand career studies. Therefore, the second aim of this study is to explore if there is any significant difference caused by such demographic elements, either in the levels of different career attitudes held, the levels of endorsement of career adaptability, or the desire for implementation of career self-management behaviors.

In summary, this study was designed to investigate three core aspects of a recent tertiary graduate's career development: career attitudes, career adaptability and career self-management, with a view to engaging with the open issue as to whether these aspects could be influenced by an individual's demographic elements. To explore these three aspects, a quantitative research method was best suited to the fulfillment of the research questions set out:

- 1) *To what extent do recent tertiary graduates in New Zealand hold different career attitudes, with a consideration on their demographic elements?*
- 2) *To what extent do recent tertiary graduates in New Zealand endorse career adaptability, with a consideration on their demographic elements?*
- 3) *To what extent do recent tertiary graduates in New Zealand implement career self-management behaviors, with a consideration on their demographic elements?*

Chapter 2 reviews previous literature, establishing a theoretical background for this study by examining gaps in knowledge and previous empirical studies, and exploring

relevant research interests. Chapter 3 outlines the present study by describing the research questions in greater detail. Chapter 4 introduces the research methodology, aspects of method selection, questionnaire design and the main analysis strategies. Chapter 5 presents sample profiles and results of statistic analysis. Chapter 6 discusses the results relating to the three research questions, with a statement of the limitations of the study. Chapter 7 contains the conclusion that summaries the overall findings, and proposes a number of practical implementations for both recent tertiary graduates and institutions.

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Chapter 2 – Literature Review

As a knowledge background and theoretical framework for the present study, this chapter sets the stage for the thesis by reviewing previous literature on the three focal aspects – career attitudes (in particular, boundaryless and protean careers), career adaptability and career self-management behaviors. The first three sections of this chapter will discuss the core theoretical aspects and existing measurement approaches of each concept. The last section will briefly review research on the influence of demographic elements, and focus on perceived gaps between theoretical and empirical research regarding these concepts, which in return, leads to the research questions presented in Chapter Three.

2.1 Career Attitudes

2.1.1 Boundaryless Career

The boundaryless career is an attitude founded on the belief that, in a new economy influenced strongly by changing technology and filled with opportunity, insecurity and flexibility, previous boundaries that used to limit or constrain individuals' careers are disappearing or becoming permeable (Arthur & Rousseau, 1996). There are many examples to be followed in the literature. Represented by multifunctional teams in high-technology companies in Silicon Valley and the independent Hollywood film-making industry, project-based assignments in today's workplace have enabled individuals to work beyond not only the intra-firm boundary, but also the inter-firm boundary (Koskinen, 2008; Littleton, Arthur, & Rousseau, 2000; Saxenian, 1996; Skilton & Bravo, 2008). When international organizations make the globe 'flat' for global careerists, geographical, national and even cultural boundaries are somehow conquered in the process of globalization (Peiperl & Jonsen, Gunz, et al., 2000; 2008; Pringle & Mallon, 2003). In addition, with the assistance of the Internet, busy professionals, who enjoy entertainment moments during work time and who also enjoy working in what is normally off-work time, have already blurred their work and life boundaries (Ashforth, Kreiner, & Fugate, 2000; Sturges, 2008). A boundaryless career

is defined as existing “with no limits to the territory into which it can extend” (Inkson, 2006, p.53); Brisco and Hall (2006a) suggest that the boundaryless career emphasizes the seemingly infinite possibilities that a career can present, and upholds that taking advantage of such opportunities can lead to success.

Two major factors contained within the boundaryless career concept, organizational mobility and a boundaryless mindset, have been thoroughly discussed in established career literature. Organizational mobility, the mobility among employers along with the decreasing organizational boundaries, is noteworthy (Arthur & Rousseau, 1996; Feldman & Ng, 2007; Gunz, et al., 2000; Sullivan & Arthur, 2006). Both career academics and practitioners agree that the most prominent characteristic of the boundaryless career is its opposition to the stereotype of organizational careers (Briscoe & Finkelstein, 2009; DeFillippi & Arthur, 1994; Granrose & Baccili, 2006; Littleton, et al., 2000). In a typical organizational career paradigm, a career is normative, viewed as a lifelong profession, and singly and externally measured by success or failure of hierarchical advancement within an organization (Hall, 2002a). Organizations provide job security and developmental predictability to individuals in exchange for their loyalty (Littleton, et al., 2000). Task orientated work requires universal competencies in a narrowly specified field of expertise, and organizational and personal missions are often separated when individuals act out different roles at work than in their private and family life.

By comparison, boundaryless careers are the opposite. In a boundaryless career, a career per se is a sequence of work experiences intertwined within an individual’s life span (Hall, 2002a). It is no longer objectively viewed only as vertical advancement within an organization, but more subjectively and internally considered as a person’s satisfaction in their achievement (Arthur, Khapova, & Wildersom, 2005; Eby, Butts, & Lockwood, 2003; Gunz & Heslin, 2005; Sullivan, 1999; Walton & Mallon, 2004). With more outcome-orientated than task-orientated work assignments or projects, the career competencies required become different from situation to situation. As a result, general expertise and specialized expertise are merged, and individuals need to build whatever competencies are required, so that they can generate the desired career outcome (DeFillippi & Arthur, 1994; Jerry & Thatchenkery, 1996; Kuijpers, Schyns, & Scheerens, 2006; Sullivan, 1999). Traditional career transactions, in which individuals

offer loyalty to institutions in return for deferred awards including job security, promotion and pension rights, are being replaced by a mutual reciprocity, a relationship-based psychological contract between individuals and institutions (Jerry & Thatchenkery, 1996). With such reciprocity, individuals expect neither long-term job security nor developmental predictability, but they gain more learning opportunities to reinforce their competencies, especially outside their current employment, by working with a fluid employment system (Littleton, et al., 2000). Therefore, the boundaryless career can be summarized as a new picture of dynamic employment (Arthur & Rousseau, 1996).

A second major factor of a boundaryless career is the so-called boundaryless mindset, with its highlighting of various types of mobility across all types of boundaries. It is claimed that there are many kinds of mobility across all types of boundaries, such as cultural boundaries, boundaries between identities and roles, and of time and space (Gunz, et al., 2000; Kreiner, Hollensbe, & Sheep, 2006; Sommerlund & Boutaiba, 2007; Zeitz, Blau, & Fertig, 2009). A recent illustration of mobility between boundaries is Sullivan and Arthur's (2006) work on physical mobility and psychological mobility. The former is the transition across actual objective career boundaries such as organizational, industrial and geographical; and the latter is the subjective perception of individuals' capacity to make such transitions (Arthur & Rousseau, 1996; Sullivan & Arthur, 2006). So far, career studies have largely highlighted physical mobility, neglecting psychological mobility as well as the relationship between physical and psychological mobility (Pringle & Mallon, 2003; Sullivan & Arthur, 2006; Walton & Mallon, 2004). This neglect is partially due to the inadequacy of approaches that could effectively measure the psychological dimensions of careers, and researchers' lack of input through relevant qualitative studies, such as innovation and the construction of new research tools or empirical studies (Arthur, et al., 2005; Sullivan & Arthur, 2006).

However, although career boundaries are increasingly being crossed, the notion of boundaryless careers is simply claimed as a problematic misnomer by some researchers, as they argue career boundaries still exist for good reasons (Pringle & Mallon, 2003; Sommerlund & Boutaiba, 2007; Sullivan, 1999; Sullivan & Arthur, 2006). These researchers insist that the boundaryless career concept conjures up an image that career boundaries no longer exist, which remains untrue from their point of view (Pringle &

Mallon, 2003). They believe that even in a few industries, like the Silicon Valley and high-tech biotechnical firms where the most prototypical of boundaryless careers are found, traditional organizational boundaries still exist to limit careers actors' freedom of mobility. For instance, in the US high-turnover IT industry, individuals' prior career mobility has a negative effect on their access to obtaining permanent jobs (King, Burke, & Pemberton, 2005). Besides these traditional boundaries, mental or cognitive boundaries are hardly to be disposed of, but these often easily affect individuals' initiation of boundary crossing activities. These include dynamic boundaries between individual's identities occurring through work and family role demands, their level of adaptability, and their possession of knowledge and skills (Ashforth, et al., 2000; Kreiner, et al., 2006; Walton & Mallon, 2004). Also, individuals' qualifications, previous working experience and portable skills could circumscribe careers by generating boundaries when they look for new career opportunities within the job market (Feldman & Ng, 2007; Gunz, et al., 2000; King, et al., 2005; Sommerlund & Boutaiba, 2007; Walton & Mallon, 2004).

Therefore, careers are still bounded in ways, but boundaries are increasingly transcended by striving individual career actors. The boundaryless career attitude focused on in the present study is more about an individual's attitude towards boundary crossing, rather than boundary blurring. This is consistent with the commonly accepted view of boundaryless careers, that boundaryless career attitudes focus on the increasingly permeability of boundaries (Inkson, 2006). Although it is perceived as a promising research area in contemporary career studies, the boundaryless career attitude is still viewed as a hard-to-test assumption and needs to be further explored by more empirical studies (Briscoe, Hall, & Frautschy, 2006).

2.1.2 *Protean Career*

Compared with the boundaryless career attitude, which emphasizes the crossing of career boundaries objectively and subjectively, the protean career concept is more of a value system that focuses on individuals' subjective perspectives on how they deal with their external employment environment (Briscoe & Hall, 2006a). Represented by the Greek sea god Proteus who could transform his shape freely according to his

environment, the protean career is easily understood as being synonymous with flexibility and versatility (Inkson, 2006). Hall (1976) first defined the protean career as a concept in which individuals adjust themselves and prepare to change, according to changed needs within their circumstances. Later, in resonance to the changing employment relationship from a 'marriage' or 'paternalism' tie between an organization and an individual, to a psychological or social contract between the two (Hall, 2002a; Inkson, 2004; Thijssen, Van der Heijden, & Rocco, 2008), more people have accepted Hall and Baruch's definition that the protean career is a new contract within oneself, rather than between oneself and an organization (Baruch, 2004, 2006; Brown, Cober, Kane, Levy, & Shalhoop, 2006; Hall & Mirvis, 1996; Hall & Moss, 1998). Moreover, the protean career emphasizes individuals' leading roles in charting and navigating their career trajectories and their responsibility for their own career management, measured more by their internal perspective of achievements -- the so-called psychological success -- rather than the external standards of success, as material advancement (Arthur, et al., 2005; Baruch, 2004; Briscoe, et al., 2006; De Vos & Soens, 2008; Hall, 1996b, 2004).

Whilst the ability to cope is the original meaning of the protean career, two central elements of the protean career concept, according to many career studies, are value-driven and self-directed orientations towards individuals' personal career management (Briscoe, et al., 2006; De Vos, Soens 2008; Inkson, 2006; Sargent & Domberger, 2007; Thijssen, et al., 2008). Personal values, such as one's identity and self-awareness, are treasured deeply within individuals' hearts, thus enabling them to choose jobs expressing their most important beliefs or interests, to become their own person at work, and to fulfill themselves, by taking on subjective motivations (Briscoe & Hall, 2006a; Inkson, 2006; Sargent & Domberger, 2007). Moreover, in today's workplace, where multi-directions of a career have been replacing the one-way direction to the top, a value-driven attitude is a premise for an individual to prize the uniqueness of his or her own career life (Richardson, 2000). In addition, being self-directed is essential for individuals, so that they can transfer their values into actions, when seeking career opportunities and heading towards their own personalized career success (Baruch, 2006; Inkson, 2004). When organizations provide limited career development facilities, individuals shoulder the great part of the responsibility for their career management and therefore, everyone can be perceived as self-employed, through being their own agent

and managing their own career (Granrose & Baccili, 2006). Hence, it has been argued that, without a principal inner guidance driven by one's deeply held values and embodied by their positive and self-initiated behaviors, a person cannot become one's own agent, when managing a career (Briscoe & Hall, 2006a; Briscoe, et al., 2006; Inkson, 2006; Sargent & Domberger, 2007).

The protean career has refreshed the meaning of contemporary careers by reinforcing a whole-life career model, with freedom and growth as its core values (Hall, 1996b, 2002a; Sargent & Domberger, 2007). In the stage of a new economy, fully acknowledged by unpredictability, autonomy and complexity, careers are no longer concerned to be only the development of a person's work, but they are also the development of one's life work (Hall & Mirvis, 1996). For example, volunteer work, part-time, contingent and temporary jobs, self-employed undertakings and work-at-home periods, all help to slowly shape or transform an individual's identities and attitudes towards different careers during their life span (Hall, 1996b, 2002a). When career paths have broadened from being vertical to lateral, to non-linear movements across relatively loose boundaries, individuals have every right to enjoy autonomy and freedom, when charting and navigating their own career paths; yet, the only way to obtain this freedom to the largest extent is through continuous personal and professional growth (Briscoe & Hall, 2006b; Gunz & Heslin, 2005; Hall, 1996b). Learning is now concerned with a personal and flexible activity, while traditional formal learning that precedes employment has been increasingly questioned by the flexible just-in-time work system. From the view point, careers of the 21st century are regarded as a series of short learning cycles, and counted by career age rather than the chronological age of individuals (Briscoe & Hall, 2006a; Doyle, 2000; Hall & Mirvis, 1996). Therefore, as summarized by Hall (2002a), the working definition of a protean career is the "individually perceived sequence of attitudes and behaviors associated with work-related experiences and activities over the span of the person's life", and it highlights "growing, responsibility, and empowering" (p.5).

The protean career concept has given rise to an ideology of individuals' independent agent role in assuming the responsibility for managing their own career more than ever; however, the individualism implied in this ideology has been argued intensely. Hall and Mirvis (1996) were concerned about the negative influence that the isolation and

segmentation implied in the frame of protean career could bring to individuals and organizations. Similarly, other researchers critiqued that when everyone embraces self-centered individualism, they are more than ever on their own, and that isolation and separation could possibly result in trivialization of emotional relationships in the workplace as well as in one's personal life, which consequently may undermine the social fabric of society (Young, Valach & Domene, 2005). However, Baruch (2006) argued that, compared with the traditional organizational careers, the ideology of the new protean career may not always bring changes for the better, but that the bad results such as low employment commitment and possible ethical problems caused by result-orientation in business are more from mistrust, poor implementation and cynicism implied in individualism, rather than the protean concept itself (Baruch, 2006). Moreover, a group of scholars claimed that the protean career contributes more to the inter-connection between individuals and organizations, than undermining it. For instance, regarding the new protean contract, Kahn (1996) recommended that the only way for an individual to be fully self-reliant at work is to make them feel supported and attached to their trusted colleagues, superiors and employers. Hall (2002a) summarized the argument, and reinstated that the core competences of adaptability and identity in a protean career cannot be done alone by individual heroics; rather they require growth-fostering interactions with others.

In summary, the protean career is perceived as self-directed career management behaviors guided by individuals' inner values. As a psychological contract, it emphasizes a self-centered individual role in career and life growth more than ever, and requires individuals' adaptability and flexibility in a changing environment. In contemporary career studies, it has been considered the most popular career concept that is valid and applied in a boundaryless career context (Briscoe & Hall, 2006a).

2.1.3 A Balanced View on Boundaryless and Protean Career Attitudes – With Evidence from Empirical Studies

From the above review of boundaryless career and protean career concepts, it is clear that these two career concepts are different, but somewhat overlapping. Often used

synonymously in theory and practice as symbols of a new career attitude or orientation, these two concepts interplay in several assumptions. First, currently, individuals are empowered in their responsibility and ability to manage their own careers (Briscoe & Hall, 2006a; De Vos, 2008; Granrose & Baccili, 2006; King, 2004; Sullivan & Arthur, 2006). Both boundaryless and protean career concepts imply that careers are perceived as more of an attitude /orientation and relevant actions towards one's career, rather than as a career structure itself (Briscoe & Hall, 2006a; Briscoe, et al., 2006). Specifically, the boundaryless career concept emphasizes individuals' proactive boundary-crossing mobility, both objectively and subjectively, while the protean career concept focuses on an individual's role to exert major responsibility in managing their own careers.

Second, careers are perceived as individuals' personal property, capital and resource, but not as organizations' benefits (Collin, 2000; Doyle, 2000; Jones & Dunn, 2007; Littleton, et al., 2000; Richardson, 2000). On the one hand, like any property, capital or resource, careers are endowed with new meanings in terms of generating profits (Doyle, 2000; Inkson, 2004; Inkson, 2006; Jones & Dunn, 2007). For instance, careers could provide individuals with observable economic outcomes as well as potentially subjective sufficiency. Also, individuals can invest careers in expecting not only current survival, but also future thriving, and everyone is considered as the owner and stakeholder of their own careers. On the other hand, in the contemporary dynamic employment relationship, individuals do not wait passively for organizations to provide upward opportunities as benefits to reward their loyalty and hard work. Instead, the new reciprocal relationship between individuals and organizations, the new contract in the protean career, or the psychological contract defined under the boundaryless career, makes work itself a learning opportunity and a developmental reward.

Third, to successfully manage one's career capital, individuals are required to continuously accumulate transferrable career competencies in a dynamic employment context (Ball, 1997; DeFillippi & Arthur, 1994; Hall & Moss, 1998; Heijde & Van Der Heijden, 2006; Kuijpers & Scheerens, 2006; Kuijpers, et al., 2006). In the knowledge economy, intelligent careers are composed of a person's knowing-why, knowing-how and knowing-who competencies (Anakwe, Hall, & Schor, 2000; M. Arthur, Claman, & DeFillippi, 1995; Parker, 1996), and boundaryless and protean careers are both models in which individuals' development of portable employability within and beyond current

employers is highlighted as a continuous process (Briscoe & Hall, 2006a; Hall, 2004). The only difference between protean and boundaryless careers is that the protean career emphasizes individuals' identity and adaptability as one's meta-competencies rather than any specific competencies. The reason is, in a fast changing world, there is no certain set of career competencies, but only competencies suitable for specific contexts, and all specific competencies can be gained through self-directed actions with the facilitation of the meta-competencies (Inkson, 2004; Inkson, 2006).

As boundaryless and protean career attitudes are both perceived as overlapping but distinct new career attitudes compared with the traditional organizational career attitude, two important empirical models have been established in recent years to try to measure them. Sullivan and Arthur's (2006, p.23) model measures individuals' boundaryless orientation along two continua: psychological and physical mobility. They suggest a boundaryless career model characterized by varying levels of psychological and physical mobility (Figure 1), and created four quadrants or pure types of individuals' career profiles accordingly. Compared with this model, Briscoe, Hall and Frautschy's (2006, p.11) protean and boundaryless scales are more complicated, as their results reported eight main types of career profiles in general (Figure 2). The implementation of both these two measurement instruments provide evidence to the proposition that boundaryless and protean attitudes are independent yet overlapping cognitive constructs which could largely affect any of an individual's career choices. In addition, the importance of these two studies is that they contribute an instrument for future empirical research so that individuals' career attitudes can be measured, and this will lead to many new research directions for future empirical research which link career studies to other fruitful areas.

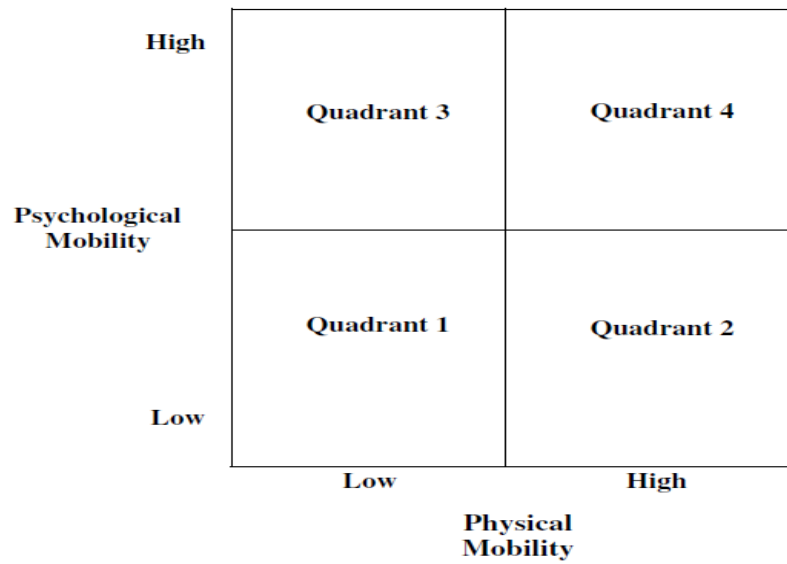


Figure 1: Two dimensions of boundaryless careers

Protean: Self-directed career management	Protean: Values driven	Boundaryless: Psychological mobility	Boundaryless: Physical mobility	Hybrid category/archetypes	Career actor's personal challenge in maintaining status Quo	Career actor's and supporting groups' career development challenge
Low	Low	Low	Low	"Lost" or "Trapped"	React quickly to opportunities, survive.	Clarify priorities, gain career management skills, expand perspective.
Low	High	Low	Low	"Fortressed"	Find stable, opportunities in predictable organizations that match values.	Broaden in terms of open-mindedness and self-direction. Otherwise, person and employers will suffer unless this person is a perfect fit for an extremely stable situation/organization.
Low	Low	Low	High	"Wanderer"	Continuously find new rides to "hitch."	Help develop self-direction, establish whether fit good after this is achieved.
Low	High	High	Low	"Idealist"	Finding organizations that match values, curiosity, but don't require mobility.	Find challenges to push out of comfort zone and help build adaptability skills—in terms of mindset and working across boundaries.
High	Low	High	Low	"Organization man/woman"	Find stable organizations in which basic performance competence can be demonstrated.	Don't be seduced by performance ability. Increase self-awareness to make leader of high performer.
High	High	High	Low	"Solid Citizen"	Person-organization fit a must. Mobility a threat.	Maintain diversity of talent but leverage solid citizen's contributions.
High	Low	High	High	"Hired Gun/hired hand"	Identify and respond to best opportunities for providing services across boundaries	Convert talented, reactive person into effective, self-aware leader with a sense of priorities.
High	High	High	High	"Protean Career Architect"	Leverage capability into meaningful impact	Provide stages on which to shine, learn, engage. Temper if needed.

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Figure 2: Protean and boundaryless combinations: career profiles and development challenge

The findings of subsequent researchers who have used the above two empirical matrix further claim that individuals cannot be simply justified as boundaryless or not, or protean or not; rather, new and traditional career attitudes can be identified simultaneously in any single individual, and the level of their combination of different career attitudes should be better depicted on a scale, with acceptance of these attitudes differentiated for each person (Baruch, 2006; Briscoe & Hall, 2006a; Briscoe, et al., 2006). Baruch (2006) proposed that neither boundaryless nor protean career concepts can truly capture the nature of career development in reality, because neither extremely non-traditional careers, like protean or boundaryless, nor extremely traditional organizational careers, can exist solely in such a complex world. Similarly, other

researchers revealed that although protean aspects of career attitudes were obviously found in all Australian managers they interviewed, traditional career attitudes were upheld by each of them at the same time, and such attitudes were even identified as dominating for some (McDonald, Brown & Bradley, 2005). Also, in a case study about UK middle management employees, Currie, Tempest and Starkey (2006) claimed that these participants' endorsed the freedom of inter-organization mobility, but simultaneously, they still cherished the diminishing career security of traditional organizations.

Moreover, empirical studies based on the above mentioned models have provided sound evidence of the opinion that boundaryless, protean attitudes and traditional organizational career attitudes are complementary to each other in a transforming employment continuum from traditional to diverse (De Vos & Soens, 2008; Eby, et al., 2003; Heslin, 2005; McDonald, 2008). For instance, McDonald and Hite's (2008) study on career success among young people aged 18 to 30 across five European countries, they concluded that these young people's definition of success is a compound but fluid construction, marked by not only expectations on individualism, maximum growth opportunities and multidimensional psychological contract that are hallmarks to new career attitudes, but also by external standards such as adequate pay and job security. Therefore, it is reasonable to assume that a balanced view of each individual's career attitude is needed, because the traditional organizational career attitude is still far from being obsolete in the real world, although many scholars hold the tendency to argue that careers have fundamentally changed to boundaryless or protean (Baruch, 2006).

In summary, since there is much interplay between boundaryless and protean careers as interdependent career concepts, it is reasonable to discuss them together when considering contemporary individuals' career attitudes. Based on Briscoe and Hall's (2006) model, this study will endeavor to explore the extent to which recent tertiary graduates possess these new career attitudes in a New Zealand working context. Also, as an empirical study, it will endeavor to show how demographic elements can affect these graduates' career attitudes.

2.2 Career Adaptability

2.2.1 From Career Maturity to Career Adaptability

In a fluid and non-linear employment context, career pursuers are required to hold a boundaryless mindset and protean attitude, and are in need of more personal flexibility and readiness to cope with an ever changing work environment and other life transitions. When a career is thought of as fragmented working experiences and an everlasting search for the best match between oneself and a changing environment, it is said that the time for career adaptability has come (Goodman, 1994). Furthermore, anyone who endorses the protean or boundaryless career cannot afford to overlook personal flexibility and career adaptability, because dismissing or overlooking in these elements would possibly lead to a problematic implementation of these career attitudes. For example, with high self-awareness but low adaptability, an individual could embody self-analysis paralysis by avoiding taking all actions (Hall, 2004; Inkson, 2006).

The enthusiastic study of today's career adaptability construction derives from Super's model of career maturity, in which career adaptability is perceived as one stage of an individual's developing career maturity. Super proposed a classic career development theory of life-span, life-space perspective on person-environment convergence, in which he elaborated a well-known career maturity model referring to an adult's cognitive and attitudinal readiness to make vocational decisions (Nevill & Super, 1988; Westbrook, 1983). According to this career maturity model, two cognitive dimensions involve knowledge acquirement of the principles and process of making career decisions; and two attitudinal dimensions relate to individual's attitudes on career planning and exploration (Hartung, Porfeli, & Vondracek, 2008; Savickas, 1997). Among these four dimensions, the focal components of career maturity are decision making and planning (Hartung, et al., 2008; Heijde & Van Der Heijden, 2006; Savickas, 1997; Super, 1994; Vianen, De Pater, & Preenen, 2009). Super and his followers believe that with increasing career maturity gained in a person's life span, one will be more capable to make good career decisions and plan a rewarding career future.

However, considering non-linear, unfixed career paths in the post-industrial employment context, the career maturity model has been losing its appropriateness in guiding career actors towards a continuous career development (Savickas, 1997; Vianen, et al., 2009). Regarding the decision making facet, there are four main reasons why gaining career maturity is not suitable to more recent career pursuers. First, too many available career options can easily induce individuals to set higher career standards and largely delay their decisions making process (Germeijs & De Boeck, 2003; Goodman, 1994; Vianen, et al., 2009). Second, when a person believes that he or she, rather than anyone else, is the sole party responsible for their careers, individuals not only become reluctant to make career decisions, but also are more likely to make spontaneous decisions rather than well informed and rational ones (Germeijs & De Boeck, 2003; Vianen, et al., 2009). Third, the assumed irreversibility of career decision-making (that a career decision made in one's early career stage will deeply influence the person's whole career life) directly causes many young people to choose a "right" career rather than the career they wish for (Germeijs & De Boeck, 2003). In the short term, choosing the right career instead of a career that one likes, seems to reflect one's career maturity, but in the future, it could be a trap that might even ruin their happiness. Finally, research has found that an individual's ability in decision making may not continue to increase after they reach adolescence (Goodman, 1994). Hence, it is problematic to assume that with more maturity gained through a life span, one will make better career choices.

Moreover, the career maturity model is not suitable for today's career actors in terms of developing their career planning ability. The future is unpredictable; accordingly, it is not meaningful to associate an individual's early career choice with a distant future plan (Hartung, et al., 2008; Skorikov, 2007; Vianen, et al., 2009). As put forward by Vianen, Pater and Preenen (2009), it is more practical for an individual to increase their ability in developing a positive and flexible view of themselves and their environment, rather than structure a long term career blueprint. In addition, one's adjustment characteristic is perceived to be more important than one's planning ability in career development, because adjustment is the way to maintain continuity in a changing developmental direction (Skorikov, 2007). Arguable, therefore, the concept of career maturity is less likely to contribute to one's career development in the contemporary working context, and a new construct to replace this model is desirable.

2.2.2 *The Construct of Career Adaptability*

Career Planning and Career Decision Making

Derived from Super's (1984) career maturity model, Savickas (1997) has proposed a career adaptability construct in which career adaptability is defined as "the readiness to cope with the predictable tasks of preparing for and participating in the work role and with the unpredictable adjustments prompted by changes in work and work conditions" (Savickas, 1997, p.254). In this definition, the second part aligns with the traditional career maturity model in terms of the significance of career planning and decision making, while the first part emphasizes an ever-lasting need to respond to salient situations in work places (Vianen, et al., 2009).

In essence, planning and decision making are said to be the core dimensions of career adaptability. Planning is necessary, because with a planning attitude, a career actor is more likely to integrate the past and the present with the future, which brings a sense of continuity into career development (Rottinghaus, Day, & Borgen, 2005). Planning attitudes and beliefs can activate the career agent to engage in effective behaviors and activities to manage their careers (De Bruin & Buchner, 2009). Moreover, with planning attitudes, an individual can be more future oriented, so that they can foresee life roles available in the near future, and prepare themselves to in advance (Savickas, 1997). Similarly, the refined decision-making dimension continues to be a crucial component in the career adaptability construct. Career decision making involves being one's own agent in investigating knowledge and entering an environment of myriad new challenges and career opportunities, where decision-making self-efficacy is continually an important career competency in adapting to the fast changing world (Herman, 2001). By comparison with Super's (1984) career maturity model, the career adaptability construct emphasizes that individuals need to be fully aware that career plans should be short-term rather than long term; a person should not hesitate when the decision is "good enough", and should avoid endlessly pursuing the maximum of the best ultimate choice. Often, this has been found to not be beneficial and maybe not even healthy (Ganske & Ashby, 2007; Nash & Stevenson, 2004).

On the other hand, Savickas' (1997) construct of career adaptability highlights the more psychosocial dimension of adaptability, the ability to cope; it co-exists with the perception of protean and boundaryless career concepts which consider the significance of adaptability as one of the focal dimensions of new career attitudes. There are several points underpinning this relationship. First, the readiness to cope is intertwined in an individual's sequence of life stages and across all life roles (Goodman, 1994). Adaptability, defined by Savickas (1997) as voluntarily changing with one's environment, is in accordance with Hall's (2002a) protean career attitude regarding personal flexibility (De Bruin & Buchner, 2009; Hall, 2002a). With a planning attitude and informed decision making, an individual's career adaptability reflects a positive active way of changing, helping individuals to continuously reach self and environmental congruence (Vianen, et al., 2009). Hence, it is a shift of attention from individual centered to individual-in-situation coinciding with actual specific working environments and life stages. Second, Savickas' (1997) definition of adaptability involves a mastery of different roles in developmental tasks and role transitions, which is coherent with Hall's (2002a) definition of adaptability as a meta-competency in the protean concept (De Bruin & Buchner, 2009; Hartung, et al., 2008; Kerns, 2007). Savickas (1997) claimed that mastery-oriented individuals focus on the development of career competencies, and they will perform new and challenging tasks that can increase those competencies. With Hall's (2002a) definition, adaptability is a meta-competency; with identity learning and adaptability, an individual can obtain any skills and competencies required in a changing environment; in other words, resembling the protean. Third, Savickas' (1997) construct of career adaptability also emphasizes the process of self-exploration and environmental-exploration, so that a full understanding of oneself and the external environment can be appreciated before a match between the two is achieved. This is concordant with the boundaryless career attitude, which upholds the significance of realizing one's own identity and personal values as well, along with sincere efforts to obtain such knowledge.

In empirical studies, models have been introduced to measure an individual's career adaptability, with the common ground that career adaptability is to be measured as a stance or orientation ranging between two extremes on a continuum. Based on his own career adaptability construct, Savickas (1984) developed a method to test an individual's degree and rate of their career maturity and adaptability, especially in terms

of facing change. Savickas (2005) further proposed career concern, career control, career curiosity and career confidence as developmental lines of career adaptability. Compatible with his career adaptability construction, this model focuses on operational and behavioral dimensions in promoting one's career adaptability, and it provides a potential guide for a future Likert-scale construction which could be a useful tool to measure both degree and rate of career adaptability (Currie, et al., 2006). Later, Hartung et al. (2008, p.69) proposed that the rate and degree of one's adaptability mainly leads to four potential categories: advancing adaptability, constricting adaptability, delaying adaptability and thwarting adaptability (Figure 3). Advancing adaptability signals completion of a broad range of developmental tasks much faster than that of a reference group, constricting adaptability denotes a narrow range of completion of tasks but finishing at a higher rate, delaying adaptability means a broad range of completed tasks finishing at a lower speed, and thwarting adaptability signifies a narrow range of tasks completed at a slower rate.

		Degree of Adaptability	
		Broad	Narrow
Rate of Adaptability	Rapid	Advancing	Constricting
	Slow	Delaying	Thwarting

Figure 3: Configurations of Rate and Degree of Adaptability

Career Resilience – A New Dimension of Career Adaptability

With the development of vocational psychology, career resilience has been accepted as one important dimension of an individual's career adaptability (Savickas et al., 2009). From a historical perspective, resilience, it denotes a combination of characteristics and abilities that allow an individual to cope successfully, bounce back from difficulties and adversity, and function above the norm, or even better, in spite of significant stress (Tusaie & Dyer, 2004). Perceived as one component of psychological capital, a concept

which contains other well-known positive psychological constructs such as confidence, hope, optimism and self-efficacy, resilience is not simply an independent construct. It is considered also an antecedent to other positive constructs, because it serves to restore other constructs challenging personal experience (Luthans, Vogelgesang, & Lester, 2006).

Regarded as a psychological and cognitive dimension of career adaptability, career resilience contains several outstanding features. First, career resilience includes important characteristics and factors that assist individuals to survive and thrive when focused with adversity (Tusaie & Dyer, 2004). Such characteristics and factors are divided into intrapersonal and environmental ones. Intrapersonal factors are cognitive, such as intelligence, humor, optimism, with a belief system that provides an individual with unique meaning of a cohesive life narrative (Kerno, 2007; Tusaie & Dyer, 2004). Environmental factors include emotional and instrumental support provided by others, such as empathy, caring, love and trust from friends and family, and constructive advice and career resources from career counselors and mentors. Second, career resilience is more of a state than a personality trait, because it can be learned at any age (Fleig-Palmer, Luthans, & Mandernach, 2009; Kerno, 2007). Although research can show that people are just born to be resilient (Waugh, Fredrickson, & Taylor, 2008), an increasing body of empirical studies shows that resilience can be obtained through practice and education; it is more of a process of struggling against personal hardship, and can become stronger after conquering career crisis or adversity (Atkinson, Martin, & Rankin, 2009; Coutu, 2002; Mangurian, 2007; Rutter, 2007).

Third, career resilience is a crucial skill in relation to an individual's career success (Coutu, 2002; Garcia, 1995). Resilient individuals are more adaptable, and they demonstrate flexibility, optimism, durability and openness to learning; while those who lack career resilience may be more easily fatigued, depressed and burnt-out in the face of unpredicted setbacks (Borgen, Amundson, & Reuter, 2004). As such, resilience is a fundamental characteristic for an individual to transform failure into success, which has been proved repeatedly in the Olympic Games, battles against diseases or disabilities, of in board rooms. Also, it is worth of noting that resilience is neither ethically good nor bad (Coutu, 2002). Taking surviving prisoners as an example, those who came back after trekking from camp to camp were those prepared to use every honest or dishonest

means to survive, while those who did not return may have been better persons morally and ethically. Moreover, Ito and Brotheridge (2005) claimed that individuals holding ethically questionable values can still be very resilient, but their resilience might cause higher fluidity among employers, and lower commitment by employees to their current employer.

As a positive psychological and cognitive construct that used to be indirectly canvassed, but not deeply studied in the career adaptability construct, career resilience now should be investigated more thoroughly in a post-industrial employment context, since more people require this skill than ever before (Fleig-Palmer, et al., 2009; Luthans, et al., 2006). For instance, when unpredictable career trajectories provide challenges and opportunities, the feeling of setback is common to every career pursuer confronting tremendous changes (Atkinson, et al., 2009; Fleig-Palmer, et al., 2009). In addition, individuals on the margin of the labor market such as new graduates, contingent workers, immigrants and minorities have accelerated a quest for career resilience, because they may be lonelier than others due to frequent relocation (Couzins & Beagrie, 2004). Therefore, empirical studies on career resilience are helpful and have a valuable contribution to make in a changing career context.

2.3 Career Self-Management

The concept of career self-management is defined as “the degree to which one regularly gathers information and plans for career problem solving and decision making” (King, 2004, p.3). With traditional organisational career paths losing place in a changing working environment, career self-management has attracted unprecedented attention in both career academy and practice, and is now perceived as one of the most important means, or perhaps even the only means, for individuals to continuously navigate and develop their careers in a turbulent world (Chiaburu, et al., 2006; De Vos & Soens, 2008; King, 2004; Quigley & Jr. Tymon, 2006). Although it is acknowledged that earlier that both boundaryless and protean career concepts emphasis individual’s proactivity and responsibility in managing his or her own careers through a new personal psychological contract rather than with the organizations, career self-

management is a process model, applicable in any context of an individual, an organization, stretching across organizations and industries, and lasting throughout an individual's whole career life (King, 2004).

2.3.1 Emerging Needs of Career Self-Management and Three Types of Models

Careers literature has investigated emerging career self-management as a crucial need for individuals' continuous career development. Early in the 1990s, studies on organisational careers brought attention to the urgent awareness of employees' career self-management responsibility in a changing organisation (Arthur, et al., 1995; Stickland, 1996). Later, empirical studies on career success found that effective and intensive career self-management is a useful approach to increase individual's career outcome, both objectively and subjectively (Bradley & Devadason, 2008; Heslin, 2005; King, 2001). Recently, the accumulating attention on individuals in career transitions and employees on the margin of the workplace largely urges the need to develop individual's career self-management (Bradley & Devadason, 2008; Gold & Fraser, 2002; Elchardus & Smits, 2008). Moreover, career studies on under-employment or unemployed individuals claim that career self-management strategies are crucial in increasing such people's marketability, so that reemployment can be implemented sooner than for those who do not initiate effective self-management (Thijssen, Heijden & Rocco, 2008; Forrier & Sels, 2003; Fouad & Bynner, 2008; McArdle, Waters, Briscoe, & Hall, 2007).

In response to this increasing need for individuals to implement career self-management behaviours, in recent years significant theoretical models of career self-management with substantive empirical support have appeared. These cover broader career aspects such as adapting different career contexts, improving entrepreneurship and managing balance. According to whether the career self-management concept is perceived as a framework of strategies/behaviours, knowledge, or both, three major types of models have been established.

Represented by King's (2001) study, the initial career self-management model generally can be seen as a cyclical implementation of behaviours. Based on the perception that career self-management is a recursive and dynamic process, King (2001, p.67) proposed a conceptual framework of guidance on career self-management for individuals in relatively stable employment within organizations. Since organizational careers are inevitably influenced by a few key individuals, and the so-called gate-keepers possess the rights to allocate human resource policies, this model provides guidance on how individuals could continuously navigate their own way through this political organization context, and thwart boundaries to better influence the gate-keepers' decisions through formulating certain behaviours (Figure 4 and Table 1). The strong point of King's (2001, p.71) model is that it uncovers the importance of a person's career context, and the ability to adjust to career contingency can be as important as a person's career competency. Also, this model attempts to assist career pursuers in less stable employment situations, such as those facing structural constraints in organisations (King, 2004).

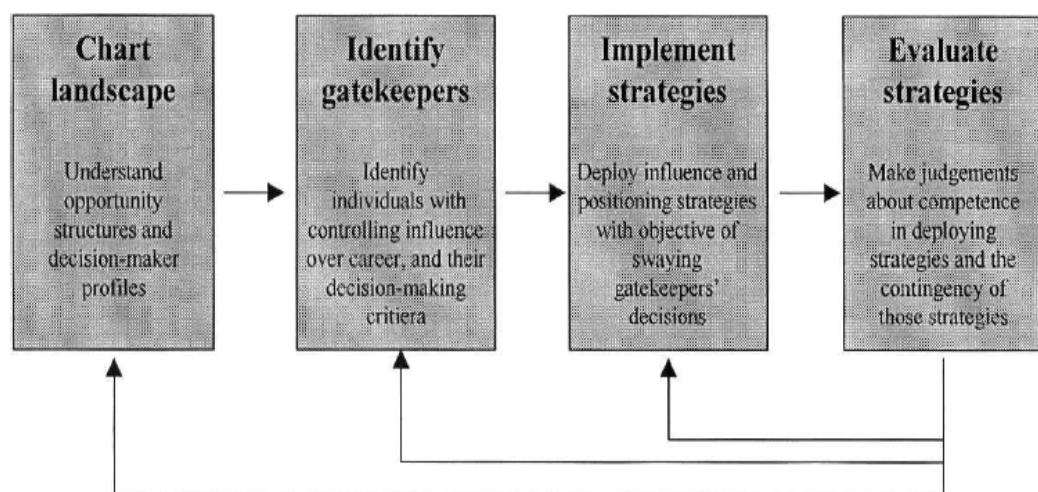


Figure 4: A cyclical model of career self-management in organizations

Table 1: Types of career strategies, and appropriate situations for their implementation

Strategy	Description	Appropriate instances for implementation
<i>Influence strategies</i>		
Self-promotion	Manipulating gatekeepers' perceptions of one's competence or merit	Where gatekeeper is known to individual, but has limited access to information that could repudiate claims (e.g. selection)
Ingratiation	Increasing gatekeepers' liking or perception of similarity	Where gatekeeper is known to individual, and belongs to similar organisational group; where power differential between individual and gatekeeper is high
Upward influence tactics	Convincing gatekeeper to grant a particular outcome using persuasion, bargaining or assertiveness or by invoking sense of dependency or obligation	Where power differential between individual and gatekeeper is low, or where individual has strong bargaining power relative to employer
<i>Positioning strategies</i>		
Active network development	Developing contacts with individuals in positions of power or influence, or with access to information or opportunities	Where direct contact with gatekeepers is facilitated; where gatekeepers are distant. Indirect contact via influential others may be useful for acquiring information about gatekeepers' decision-making criteria and for communicating one's reputation
Strategic choice of job move	Choosing job moves which develop strategically valued skills or experience, or leverage existing credentials	Where gatekeepers' identity is not known to individual, or in anticipation of future opportunities
Strategic investment in human capital	Acquiring strategically valued training or education (as a result of own or employers' investment)	Where gatekeepers' identity is not known to individual; where investment differentiates one from others in similar situation
Job content innovation	Extending one's task environment or volunteering for extra responsibilities in order to acquire additional skills or be in contact with influential people	Where gatekeepers' identity is not known to individual; where gatekeepers are otherwise distant or dissimilar to individual

The second type of career self-management model emphasises the importance of knowledge in managing careers. From the standpoint that career is a repository of knowledge and it is one's own capital, Inkson and Arthur (2001, p.52) abstracted a career self-management model (Figure 5) that illustrates how an individual could successfully become a career capitalist by accumulating three types of knowledge, "knowing-why", "knowing-who" and "knowing-how" (Inkson and Arthur, 2001). The accumulation of one type of knowledge will positively influence the accumulation of the other two, and sometimes, the investment made in one career arena could bring about unexpected career outcomes in others (Kuijpers & Scheerens, 2006). Complementary to King's (2001) model, Inkson and Arthur's (2001) model implies that careers are managed through identifying and implementing new and frequently unanticipated career opportunities, so investment in career capital should change over time according to changes in investment marketplaces.

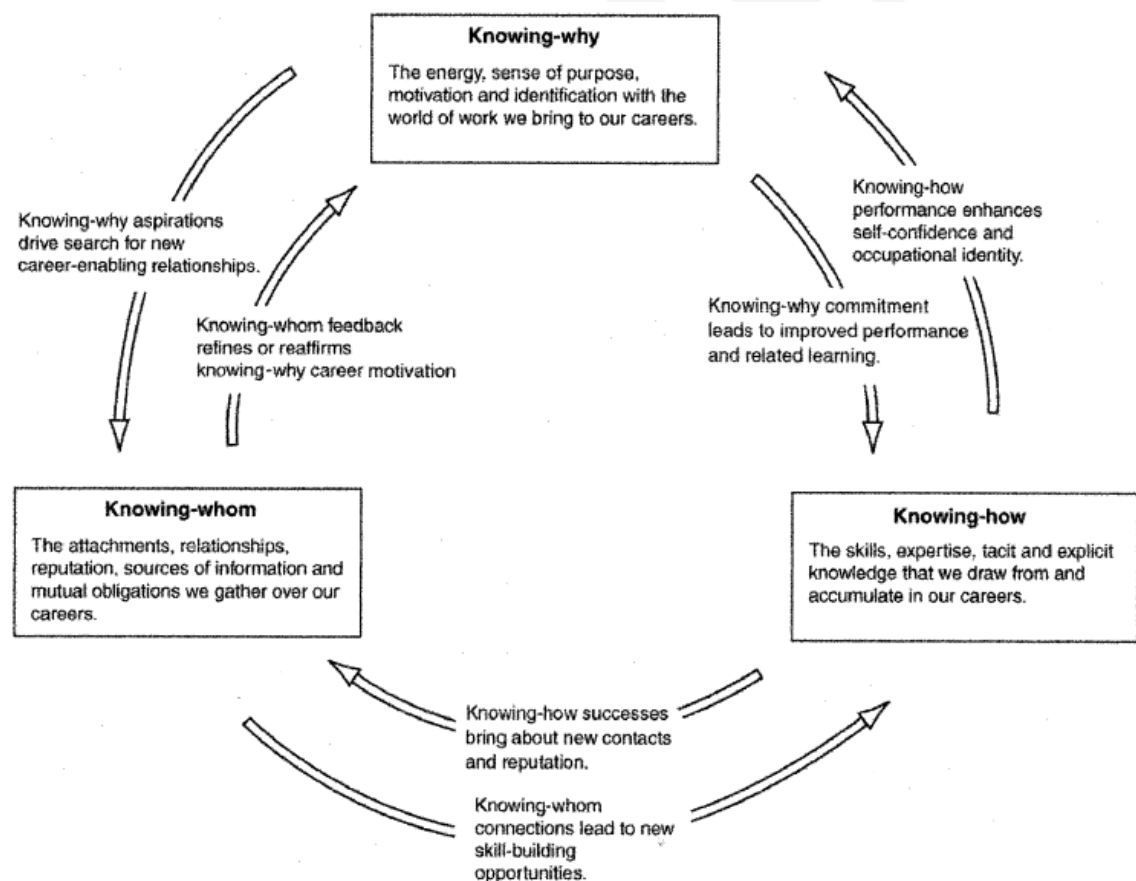


Figure 5: Three ways of knowing in career self-management

A third type of career self-management model has combined both reflective and behaviour components and emphasised the significance of both these components (De Vos & Soens, 2008). Reflection is defined as cognitive engagement in making sense of one's experience (Hall, 2002b), and the insights an individual develops into his or her own career inspiration (De Vos & Soens, 2008). This reflective facet of career self-management works mainly on improving the individual's sense of personal identity, which is perceived to be the basis for one's career attitude and operates as an internal guide to make better focused career decisions (Hall, 1996a). The behavioural component of career self-management is built on the proactivity that an individual embodies when self-developing their careers, including concrete actions such as networking, feedback seeking and self-nomination. Both the reflective and behavioural components of career self-management should be simultaneously focused, which is also confirmed by Protean career researchers that, if organizations want to develop employees in self-directed career management, providing training to improve self-management behaviour is not sufficient unless it is supplemented by attitude training (Hall, 2002b). However, different from Inkson's (2001) model, De Vos and Soen's (2008) model emphasises that the purpose of all career self-management behaviours and reflection is to achieve one's career goal.

2.3.2 Major Dimensions of Career Self-Management

Although models of career self-management have their special angles and emphasises, several major dimensions have been consistently highlighted in most relevant literature. Such dimensions include the individual's exploration of self and their environment, their investment in their human and social capital, and their boundary management of a person's work and non-work life.

Exploration of Self and Environment

Exploration of self and environment has been a focus for some time in many career self-management studies. Since the 1990s, thousands of "How to..." books in the US and

throughout the world have stressed the need, significance and methods for career pursuers to implement successful exploration strategies. Within the academy, this dimension of career self-management has been investigated in a number of career self-management models, as mentioned. Regarding previous empirical studies, relative research has centred on in fields such as job search effectiveness of new graduates, career facility in reemployment, and the positive relationship between career exploration and an individual's career adaptability (Creed, et al., 2008; Werbel, 2000; Zikic & Klehe, 2006).

With regard to career self-development, an individual's self-exploration focuses upon the exploration of one's values, interests, strengths and weakness, with the utilization of a person's own self-management skills, so that individuals can realise a better understanding about themselves and achieve more success (Anakwe, et al., 2000; Zikic & Klehe, 2006). A person's value system is viewed as the ultimate test; deeply understanding one's own values greatly affects an individual's career decision making, especially when the organizations' values and personal values do not match (Arthur, et al., 1995; Ball, 1997). Understanding their interests can help individuals find where they belong, so they will not trap themselves in careers for which they do not have a passion. Knowing one's strengths and weaknesses is the key for individuals to improve their performance, so that they can achieve their best by minimum effort, without experiencing the failure of changing themselves into another person (Nash & Stevenson, 2004). Identifying personal uniqueness in implementing career management skills, such as how one listens, learns, or cooperates with others, can facilitate success in an area in which they shine (Athey & Orth, 1999). Moreover, deep self-exploration is crucial in real-time reflection upon one's contingent experiences; linking objective self-assessment and future active learning, it transfers past experiences to future learning materials (Hall & Associates, 1996).

Environmental exploration is concerned with a person's investigation of multiple career options by proactively collecting information relevant to jobs, organizations, industries and the entire labour market (Creed, et al., 2008; Zikic & Klehe, 2006). It relates to individual's optimistic and practical assessment of employment context (Ball, 1997) and adaptation to that context (Creed, et al., 2008). According to King (2001), it is the strategy conducted in identifying the gatekeeper and the way their decisions are made,

while boundaryless career scholars have emphasized the importance of information collecting about career opportunities in a boundaryless workplace (Arthur, et al., 2005; Littleton, et al., 2000; Suutari & Smale, 2008; Zeitz, et al., 2009).

Individual's career exploration of self and environment is viewed as the most important dimension of career self-management due to its relation to other career self-management dimensions. Anakwe (2000) claimed that understanding the environmental context is positively related to effective implementation of other career self-management strategies such as networking and positioning. Moreover, according to scholars focusing career adaptability, exploration of one's environment is claimed as a life-long adaptive process in facilitating effective planning and decision making, especially for individuals in career transitions (Creed, et al., 2008; Vianen, et al., 2009; Zikic & Klehe, 2006; Zikic & Saks, 2009). Vianen, et al. (2009) even proposed that exploring the immediate environment is a precedent to one's career planning and decision making; furthermore, career counsellors should first work first on helping clients to gather enough career information, and then guide them to develop a positive and flexible view toward their environment, rather than spending most time in increasing their intuitive career decision making ability (Vianen, et al., 2009).

Investment in Human Capital

Investment in human capital is viewed as the second dimension of career self-management. Generally defined as the sum of an individual's training and experience, human capital refers to personal variables that can affect career advancement, such as education or training, work experience, job related skills and knowledge (Arthur, Hall & Lawrence, 1989; Baruch, 2006; McArdle, et al., 2007). According to researchers who believe a career is an individual's own capital and property, human capital is perceived as one important component of career capital that also includes social and psychological capital (Inkson, 2001; Rutter, 2007; Singh, Ragins, & Tharenou, 2009). Moreover, human capital is perceived as the most decisive element in obtaining a competitive advantage on the job market (Baruch, 2006; McArdle, et al., 2007).

An individual could invest in two main aspects of their human capital: their working related skills and knowledge, and work experience. On the one hand, individuals can gain portable skills and individual knowledge through training or education, which are argued as the strongest predictor of a person's career progression. Although some research and practice has claimed that formal education is losing its significance as a compulsive element in assessing human capital, some level of education and training is still proposed as a valuable measure in terms of an individual's potential development and future career advancement (Fugate, Kinicki, & Ashforth, 2004). On the other hand, work experience is viewed of increasing significance in modern careers, especially when career age is replacing actual age in measuring employability, and portable skills can mainly be gained through working experience with one or more employers. With accumulated work experience, individuals not only enhance their human capital in the skills and knowledge perspective, but also increase their coping ability in assessing their career opportunities, making career plans and decisions, and adapting to new employment contexts.

There are reasons why people's investment in their human capital is a crucial element in their career self-management. Research has proved that investment in one's human capital is positively related to employability. Encompassed in Arthur et al.'s (1995) "knowing-how" knowledge and competencies, a first group of studies focused the relationship between investment in one's human capital and one's employability, and upheld that investment on increasing and updating individual's work-related knowledge and skills can facilitate individuals to remain competent in a broad employment context (Arthur, et al., 1995; Inkson, 2001; King, 2001). For instance, Thijssen et al. (2008) proposed a broadening strategy to maintain and enhance one's employability through an individual's own investment in their training and education. Sturges, Guest and Davey (2000) indicated that investment in human capital is an important component of new graduates' career self-management, and such career self-management behaviour will be helpful in transferring to career outcomes with sufficient organisational career development support. Similarly, studies in employability also claimed that for individuals to invest in continuous learning is an important way to develop their human capital, in consequence, their enhanced employability is of particular significance in their career transitions (McArdle, et al., 2007; Rothwell & Arnold, 2007). Such studies emphasize that with continuous learning, underemployed and unemployed individuals

are able to regain employment sooner than those who do not study as much, and young graduates are more likely to find employment in organizations that value their ability.

Additionally, due to the benefits that intelligent workers have brought to their workplace, organisations value those who keep investing in themselves. For example, investing in human capital, especially focusing on KSAO (knowledge, skills, ability and opportunities), is crucial for employees to meet organizations' expectation and provide qualified work performance, so that organisations benefit with increasing competitive advantages from their human resources (Fugate, et al., 2004; Sturges, Conway, Guest, & Liefooghe, 2005; Vaughan, 2005). In order to minimise the potential mobility of intelligent workers who embody organisations' competitive advantages, organizations are improving their human resource policies and motivational systems to retain these human assets (Ito & Brotheridge, 2005; Sturges, et al., 2000; Sull & Houlder, 2005). As such, an individual's investment in their human capital is perceived as one of the most important elements in the career self-management process (Baruch, 2006; McArdle, et al., 2007).

Investment in Social Capital

A working definition of social capital is: "social capital is the goodwill available to individuals or groups. Its source lies in the structure and content of the actor's social relations. Its effects flow from the information, influence, and solidarity it makes available to the actor" (Adler & Kwon, 2002, p.23). As all career actors are in a relational connection to others, investment in social capital has been one of the major topics investigated in recent career literature relevant to career self-management. For example, some career studies focused upon the sources of social capital, namely, whether an individual is more likely to relate to others through market, hierarchical and social relations when developing their careers, or whether they tend to build an external relation or an internal one (Adler & Kwon, 2002; Fugate, et al., 2004). Some highlighted the substance of a person's social capital, that is, whether an individual maintains their network like maintaining other property (Ellison, Steinfield, & Lampe, 2007; Skilton & Bravo, 2008). Some underlined the effects caused by social capital, such as career success, job seeking effectiveness, and visibility in organizations

(Gummer, 2002; Heslin, 2005; King, 2001; McArdle, et al., 2007; Seibert, Kraimer, & Liden, 2001).

Investment in social capital is an important element in career self-management, because of two main benefits which could result: broad career opportunities, and increased employability. Career opportunities that social capital can bring are overt. Active network building behaviours can give career actors better visibility in their organizations or, more possibility, influence gatekeepers' decision making relevant to themselves (King, 2001, 2004), and their knowing-whom knowledge can facilitate their job to job transitions (Inkson, 2001). In addition, entrance to an organization can be largely increased if he or she has connection with authority from within (Adler & Kwon, 2002; Fugate, et al., 2004). However, there has been a debate about an individual's differentiation in career opportunities caused by different intensity, range and frequency of their network structures. Using the job search period as an example, a strong connection with close family members or friends may not bring as much information as weak connections with common friends or acquaintances (Adler & Kwon, 2002). This view has gained support from scholars who believe a sparse network benefits actors more than a narrow network with a higher extent of closure (Creed, King, Hood & McKenzie, 2009; Brown, et al., 2006; Werbel, 2000), yet it was denied by those who upheld that in terms of external ties for competitive goals, both sparse and closure of networks are significantly beneficial to the career actor (Adler & Kwon, 2002). No matter whether the strong tie or the weak tie contributes the most to a person's career opportunities in terms of information, consultant, and positioning benefits, investment in social capital can certainly facilitate one's career opportunities.

The second main benefit of investing social capital is that accumulation can increase the career actors' employability. First, instrument information about organizations, positions or the whole industry from a person's social capital can enhance decision making ability by identifying and realising career opportunities (Adler & Kwon, 2002). Second, external support such as emotional comfort and psychological support from close friends and family members can increase self-esteem and resiliency in the face of career setback or transformation (Thijssen, et al., 2008). Third, more chances arise to consult career related issues with mentors, who could, either from work contexts or non-work contexts, increase the possibility that one can improve confidence by actively

creating career opportunities beyond the current workplace (Higgins, 2001). Finally, one's identity is embedded and enhanced in the networks he or she occupies, which brings reciprocal influence on career outcomes. For example, research showed that successful women and minorities often have extended networks beyond their work contexts, and often tend to be well-connected to both minority and majority circles (Ibarra & Deshpande, 2007).

Boundary Management of Work and Non-work

Boundary management is more salient compared with the other three dimensions in career self-management behaviours. Divided into boundary maintenance and role transition, which are concerned with the location of boundaries and navigating the transitions between boundaries, boundary management in career studies is defined as validating behaviours related to the management of work and non-work boundaries, in terms of boundary location, flexibility and permeability (King, 2004; Sturges, 2008). The concept has gained importance not less than other career self-management behaviours, such as networking, visibility and influence.

There are three main reasons why boundary management has increasingly attracted people's attention as a crucial dimension of an individual's career self-management behaviour. First, demographic changes in the workforce have brought a growing interest in work and life balance. Worldwide, more and more women entering into the workforce have largely attracted people's attention on work and life issues, as more families consist of dual workers, and family duties are becoming an influential element in those family members' career development (Donovan, et al., 2005). Moreover, there are issues and challenges for non-managerial women in terms of their family and work conflicts (Hite & McDonald, 2003). Also, as more young people enter into the workforce, their work values which greatly differ from those of their previous generations, require deeper understanding of work and life balance. Research has shown that, although it is still unclear the extent to which young people today still hold traditional work values, in European countries, and even some Asian countries like Japan and Korea, young people are expected to pursue a more balanced life style than their parents, and they are less likely to sacrifice their personal life for hierarchical

advancement in organization (Guest & Sturges, 2008; Loughlin & Barling, 2001; K. McDonald & Hite, 2008; Vaughan, Roberts, & Gardiner, 2006).

The second reason is that the contemporary career context has made boundary management a significant career issue to those who are not in management positions. As the traditionally hierarchical career path to the top is not the only career pattern for most career pursuers (Bradley & Devadason, 2008), work is no longer the central meaning of their lives (Guest & Sturges, 2008). Also, the increasing number of non-standard workers (contingent, temporary and voluntary workers) has reflected people's current attitude towards a balanced life. Research has shown that those who are voluntary or become contingent workers generally value work and life balance more than traditional organisational employees (Marler, Woodard, & Milkovich, 2002).

The third reason is that, for contemporary professionals, successfully managing the non-work dimensions of life can facilitate their effective career self-management strategies at work (Sturges, 2008). According to King (2001), career management strategies or behaviours depend on specific career goals; if balance is valued more by the individual than advancement, boundary management behaviours will be endorsed. Traditionally, balancing work and non-work life is mainly an issue for people whose careers have been established, but in the recent fast changing employment context, the choice between balance and advancement has been confronted by every professional. Similarly, Sturges (2008) argued that individuals need to manage aspects of their non-work lives so that they could more effectively implement their other career strategies, since a lack of balance may result in work and life conflicts, which can be harmful an individual's career development in the longer run. Furthermore, career success studies indicated that a balanced and satisfactory life beyond work is an important indicator of a successful career, but that a career capitalist should not have anything but a work life (Nash & Stevenson, 2004; Nicholson & de Waal-Andrews, 2005). Thus, as explained by Sturges (2008), given mental, physical and temporal resources that might be used up in extra-role activities after work, professionals should employ boundary management behaviours so as to achieve a more balanced life.

2.4 Demographic Elements and Their Influence

2.4.1 Demographic Elements and Individuals' Career Attitudes

Although boundaryless and protean careers have been thoroughly studied theoretically, till now they still feature less in empirical research, especially among career actors on the fringe of the job market with the influence of their demographic elements on their career attitude being considered. Most career studies on individuals' career attitudes that have so far been conducted are still within the scope of traditional organizations, and designed for professionals and management staff who are already skillful and experienced in their areas. By comparison, career attitudes among career actors who are on the fringe of the job market, such as new tertiary graduates and temporary workers, are much less studied (Arthur & Rousseau, 1996; Pringle & Mallon, 2003). Moreover, there is a lack of empirical studies that explore in depth how career actors' demographic elements, age range, gender, ethnicity and culture, could affect their career attitude.

The lack of such empirical studies has resulted in several contestable propositions on how such demographic variables could influence individuals' career attitudes. For example, some researchers believe that protean or boundaryless career orientations are more relevant to recent tertiary students than older employees, and older workers are more likely to embrace traditional career attitudes (Sargent & Domberger, 2007; Sullivan, Carden, & Martin, 1998). Moreover, it is argued that older people rate higher on values-driven motivation and lower on self-directedness (Segers, Inceoglu, Vloeberghs, Bartram, & Henderickx, 2008). Contrarily, other researchers claim that for most graduates, boundaryless and protean career norms are still quite unfamiliar, even though they may have naturally embraced some level of these attitudes by observation or experiencing (Montana & Petit, 2008). With regard to gender differences, a common suggestion is that protean orientations and psychological mobility are more acceptable to women (Bradley & Devadason, 2008), while men are more attracted to physical mobility and traditional upward organizational careers (Sullivan & Arthur, 2006). In considering ethical differences, it is assumed that people from an individualist culture, like western cultures, are more inclined to embody protean and boundaryless

characteristics than those from collectivist cultures (Segers, et al., 2008; Thomas & Inkson, 2007).

2.4.2 Demographic Elements and Individuals' Career Adaptability

As Savickas' (1997) career adaptability construct is still quite new in comparison to its antecedent career maturity construct, empirical studies often target only one or two dimensions of this construct when participants' demographic characteristics are considered. For example, some studies only target on how gender plays a role in individuals' career planning and decision making process (Bubany, Krieshok, Black, & McKay, 2008; Buddeberg-Fischer, Klaghofer, Abel, & Buddeberg-Fischer, 2003; Creed, Patton & Prideaux, 2007; Peake & Harris, 2002), and some only focus on the age influence on individuals' career planning or levels of their career resilience (Hirschi, 2009; Kim, Healey, Goldstein, Hasher, & Wiprzycka, 2008).

These separate empirical studies contribute many valuable views on understanding the career adaptability construct in a contemporary employment context, while they also feature some inconsistency or even opposing opinions due to each study's unique sample source, context and background of researchers. Taking gender and age influence on individuals' career planning and decision making as an example, some research indicates that women are more purposeful in making career planning than men, and age does not signify any difference in individuals' career decision making capacity (Buddeberg-Fischer, et al., 2003; Peake & Harris, 2002). Some studies imply that career planning and decision making is positively related with age, as increasing work and life experience over time is an integrated element to the ability to make career plans and decisions (Bubany, et al., 2008; Creed, et al., 2007). As such, the lack of empirical studies about individuals' career adaptability in the New Zealand context calls for further studies in this field.

2.4.3 Demographic Elements and Individuals' Career Self-management Behaviours

Previous studies have reported valuable findings as to how demographic elements might influence individuals' career self-management behaviour. With regard to career exploration, Correll (2001) suggests that gender differentiated beliefs about one's competence in mathematics and relative subjects may influence their career self-assessments in taking or persisting on a career path in such fields. In considering one's investment in social capital, women have as much social capital as men, but they intend to utilise it in a less formal way, and more for the purpose to protect their work and life balance and their families' well-being, rather than investing social capital as a formal political activity, similar to men (Lowndes, 2004). Furthermore, much more empirical research has revealed differences caused by age and gender in career actors' boundary management between work and life, with emerging viewpoints. For example, it has been argued that boundary management is crucial to both male and female young workers regardless of their employment status and family duties (Sturges, 2008; Sturges, et al., 2000), while there is no parallel conclusion that males and females are very different in their attitude on work and life balance. However, evidence is that women are the majority who wish to pursue such a balance (Sturges, Guest & Sturges, 2008; 2008).

Interestingly, around the world, empirical studies on individual's career self-management behaviours considering the influence caused by samples' demographic elements have mostly been conducted among professionals or management level employees, while similar empirical studies among new graduates, or individuals who do not possess major skills and experiences that make them desirable for employment, are still inadequate. Therefore, such an empirical study among recent tertiary graduates would be helpful in a New Zealand employment context.

2.5 Summary

With the consistent theme of maintaining individual graduate's continuous career development in a discontinuous career context, this chapter reviewed the existing knowledge base upon three major aspects of an individual' career development: career attitudes, career adaptability and career self-management behaviours, not ignoring

graduates' demographic elements. After a comparison of main concepts and models for each of the above three aspects and a review of recent empirical career studies in a New Zealand context, gaps between academic studies and empirical research have been identified, which enables the current exploratory study to be built on. The following Chapter 3 will describe this study by presenting a visualised framework, and setting out and explaining three research questions in great detail.

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Chapter 3 – Research Questions

Having identified and reviewed the established literature, it is confirmed that the purpose of this study is to explore three concepts – career attitude, career adaptability, and career self-management behaviors. These are crucial for recent tertiary graduates to obtain continuous career development in a fragmented career context. To fulfill this purpose, a visual representation of this study (Figure 6) and the three research questions are displayed as below.

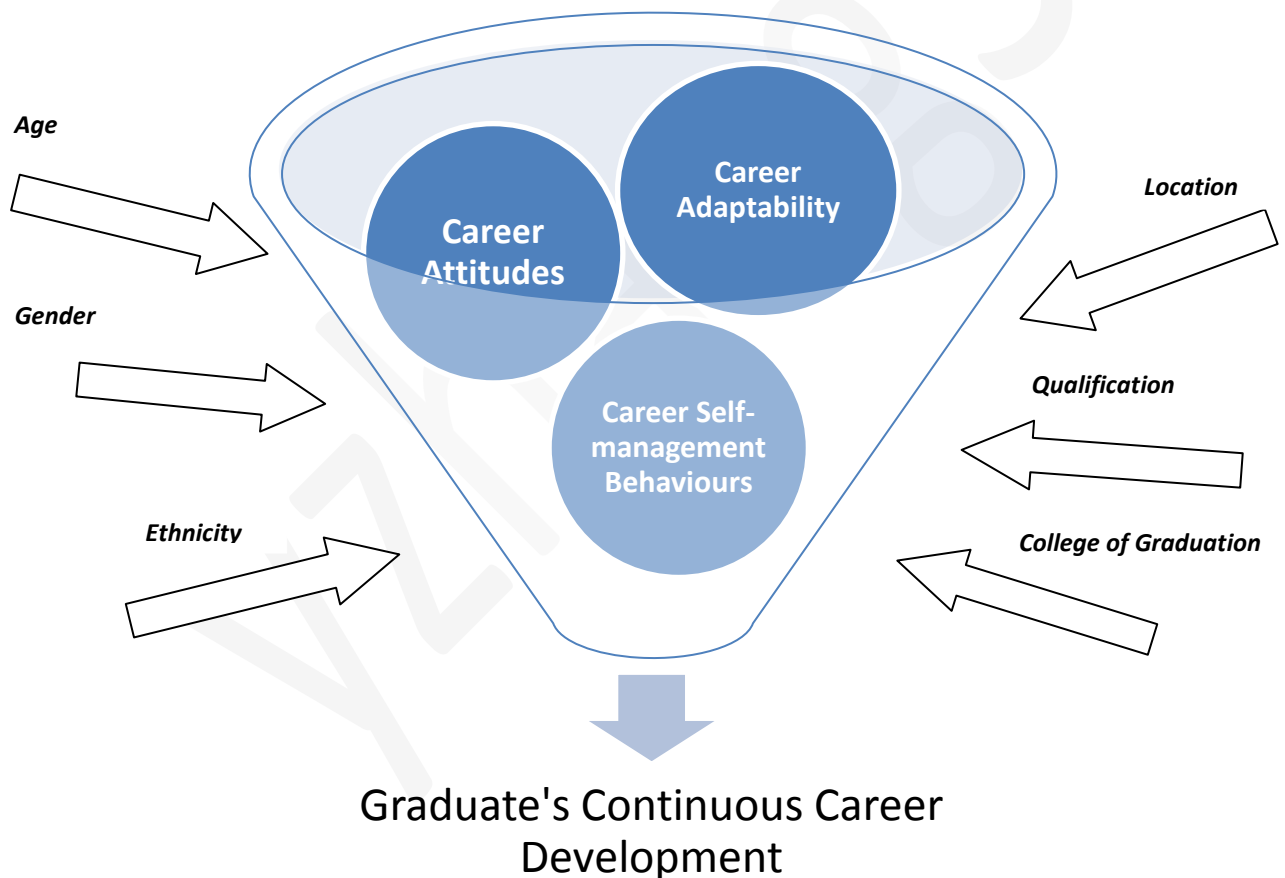


Figure 6: Visual representation of the present study

Derived from Briscoe and Hall's (2006) approach to the measurement of individuals' career attitudes, the present study is an empirical investigation into NZ tertiary graduates' career development. Instead of dividing graduates' career profiles into four or even more categories, this study will explore the extent to which recent NZ tertiary graduates have embraced protean and boundaryless career attitudes. As there are relatively few previous studies that link people's demographic details to their career attitudes, this present study will explore recent tertiary graduates' career attitudes and the relationship of these in terms of demographic variables relating to gender, age, ethnicity, highest qualification, college and location.

Research Question 1: *To what extent do recent New Zealand tertiary graduates hold new career attitudes (boundaryless and protean career attitudes), in relation to their gender, age, ethnicity, highest qualification, college and location?*

Career adaptability is another cognitive and psychological aspect relating to pursuing career continuity in a fluid employment context. This part of the study is based on Savickas' (1997) career adaptability model, and will reveal individuals' actual reflection on the four dimensions - career planning, decision making, adaptability to changes, and career resilience. As it is a trend in career studies that the construct career adaptability has replaced career maturity, it will be interesting to see how recent NZ tertiary graduates have endorsed the four dimensions of the career adaptability construct. Also, it is expected that levels of individuals' endorsement of career adaptability will be influenced by their demographic elements.

Research Question 2: *To what extent do these graduates endorse career adaptability, in terms of their gender, age, ethnicity, highest qualification, college and location?*

The previous two questions target cognitive and physiological aspects of how individuals reflect on their careers. The last research question aims to unfold the extent to which they actually do manage their own careers in order to obtain a continuous career development in the NZ employment context. Although empirical studies about career self-management of young professionals, managers and students have been

conducted in many countries, such empirical findings may not be salient within the New Zealand context. Given the fact that individuals' actual implementation of career self-management behaviours is inevitably influenced by demographic variables, it is expected that our results will be influenced by age, gender, ethnicity and qualification.

***Research Question 3:** To what extent is the implementation of these graduates' career self-management behaviours, influenced by their gender, age, ethnicity, highest qualification, college and location?*

In summary, this chapter defines the research interests for the present study, displaying a visual representation and the three research questions. The methodology used for this research will be discussed in Chapter 4, which will include reasons why a certain research method is preferred, a brief delineation of the questionnaire design, and the use of specified analytic approaches.

Chapter 4 – Research Methodology

Following Chapter 3, which revealed the three research questions, this chapter demonstrates how and the reason why an internet-mediated quantitative research method was selected for the present study. Then the design of the questionnaire is described, which is followed by the analytic methods selected, reasons to choose such methods, the important analysis procedure applied through SPSS version 14, and the major criteria used to interpret the results obtained.

4.1 Selection of Research Method

In this study, an internet-mediated quantitative research method was selected. Although the disadvantages of this research method of this increasingly used tool of survey research could not be ignored, its advantages are more obvious. Any disadvantages could be minimised or eliminated.

There were two major reasons to choose such an internet-mediated quantitative research method. First, the review of literature showed that existing research has provided a number of approaches for measurement of career attitudes, career adaptability and career self-management behaviours. Hence, developing and using these approaches could be a practical pathway to fulfil the research purpose in a quantitative manner.

Second, two main advantages of an internet mediated survey made it the most suitable method to use. Foremost, an internet-mediated survey brought about the convenience to reach suitable, geographically dispersed, participants within a limited time frame. In essence, the online survey was the only approach enabling the collection of adequate information from as many graduates as possible within such a limited time period, because a certain proportion of our target population were graduates dispersed around New Zealand, and others were even overseas. The other major advantage of an online survey was its low financial cost, thanks to the large amounts of website design and survey delivery systems offered free by software providers (Saunders, Lewis, & Thornhill, 1997).

The two major disadvantages of internet mediated survey methods - safety of participants' personal information and an average low response rate - could be overcome. To best protect participants' privacy, a professional survey company "surveyshare.com" was utilised for this study. With its facilitation, qualified online survey for this study was designed and delivered in a safe way, so that participants' personal information would not be revealed for any commercial purposes, and all data collected was stored in researchers' special databases protected and maintained by the company.

In addition, several practical approaches in this study were applied to increase the low response rate of internet mediated surveys. One was by using two rounds of pilot tests. The first round was paper-based among 30 current Massey students and staff members to refine the survey questions. The second round was a pilot online survey delivered through Surveyshare.com to 40 known respondents, in order to assure all designed online functions of the internet survey would be effectively implemented as expected. Following these pilot tests, the second initiative to increase response rate included a more suitable length of questionnaire (6 to 10 pages ideally) as well as an attractive format, a well structured cover letter, and the use of follow up online reminders.

With access to the 2008 Massey graduates' email address database granted by Massey Alumni Office in Palmerton North, an online survey for the present study was emailed to over 3500 Massey graduates who graduated from the Palmerston North campus with any certificate, diploma or degree.

4.2 Questionnaire Design

Tables 2-4 contain the main areas of interest of the online questionnaire designed for this study, including item contents, the source of items, and their reliability alpha coefficient in original studies. It is of interest that the part of career self-management behaviours was placed in front of Career Attitudes and Career Adaptability in the questionnaire, to ensure participants' reflection on their actual behaviours would not be affected by either their view of their career attitude, or of their career adaptability.

Table 2: Items, original reliability alpha coefficient and sources of the career attitude construct

Factor	Item Code	Item content	Reliability alpha coefficient	Source
Self-directed	CATPsd1*	I am in charge of my own career.	.81	(Briscoe, Hall & Frautschy, 2006)
	CATPsd2	Ultimately, I depend on myself to move my career forward.		
	CATPsd3	I am responsible for whether my career succeeds or fails.		
	CATPsd4	In relation to my career, I am very much "my own person".		
Value-driven	CATPvd1	If my company asks me to do something that goes against my own values, I'll follow my conscience.	.69	
	CATPvd2	In the past I have sided with my own values when my superior has asked me to do something I don't agree with.		
	CATPvd3	What I think right in my career is more important than what my employer thinks.		
	CATPvd4	It doesn't matter much to me how other people evaluate the choices I make in my career.		
Boundaryless mindset	CATBbm1	I enjoy working with people outside of my organization.	.89	
	CATBbm2	I enjoy work assignments that require me to work outside of the organization.		
	CATBbm3	I like tasks at work that require me to work beyond my own department.		
	CATBbm4	I would enjoy working on projects with people across many organizations.		
	CATBbm5	I am energized by new experiences and in new situations.		
Organizational mobility	CATBom1r	If my organization provided lifetime employment, I would never desire to seek work in other organizations. ®*	.75	
	CATBom2r	Ideally, I would work for only one organization. ®		
	CATBom3r	I would feel very lost if I couldn't work for my current organization. ®		
	CATBom4r	I like the predictability that comes with working continuously for the same organization. ®		

*Appendix 3 is the factor codebook. ® means that the item was negatively worded in the online survey.

Table 3: Items, original reliability alpha coefficient and sources of the career adaptability construct

Factor	Item Code	Item Content	Reliability Alpha Coefficient	Source
Career Planning	CADMp1	In my career, my primary concern is to succeed in what I plan to do.	.77	(Diemer & Blustein, 2007; Smith, et al., 2008)
	CADMp2	I enjoy thinking about and making plans for my future career.		
	CADMp3	I have created a plan for myself in my future career.		
	CADMp4	I am extremely “career minded”.		
Career Decision-making	CADMd1r	I'm confused about the whole problem of deciding on a career. ®	.85	(Diemer & Blustein, 2007)
	CADMd2r	Making up my mind about career has been long and difficult. ®		
	CADMd3r	I am uncertain about the career path that I want to follow. ®		
	CADMd4r	I'm concerned that my present career interests may change. ®		
Career Resilience	CADAr1r	It is hard for me to bounce back quickly when my career plan does not work well. ®	.79	(Diemer & Blustein, 2007; Smith, et al., 2008)
	CADAr2r	The problems associated with having a career in the future sometimes seem too great. ®		
	CADAr3r	Given barriers I will encounter in having a career, I sometimes wonder if I will overcome them.		
Career Adaptability	CADAc1	I will adjust easily to shifting demands at work.	.78	(Chiaburu, et al., 2006; Rottinghaus, et al., 2005)
	CADAc2	I can easily work with new people.		
	CADAc3	In my career, my primary concern is to succeed in what I plan to do.		
	CADAc1	I enjoy thinking about and making plans for my future career.		

*® means that the item was negatively worded in the online survey (see Appendix 3 for the codebook).

Table 4: Items, original reliability alpha coefficient and sources of the career self-management behaviours construct

Factor	Item Code	Item Content	Reliability Alpha Coefficient	Source
Career exploration	CSMexp1	I have reflected on how my past integrates with my future career.	.78	(Stumpf, Colarelli, & Hartman, 1983)**
	CSMexp2	I have focused my thoughts on myself as a person.		
	CSMexp3	I have been retrospective in thinking about my career		
	CSMexp4	I have understood a new relevance of past behavior for my future career.	.87	
	CSMexp5	I have investigated career possibilities.		
	CSMexp6	I have obtained information on the labor market and general job opportunities in my career area.		
	CSMexp7	I have investigated information on specific jobs in companies.		
Boundary management	CSMbm1r	I have worked at my job outside normal work hours. 108 ®*	.76	(King, 2003; Sturges, et al., 2000)
	CSMbm2r	I have sacrificed my leisure time for work-related activities. ®		
	CSMbm3r	I have adapted my social life to fit in with my colleagues. ®		
Investment in Human Capital	CSMsc1	I have developed skills that will be needed in future career positions in my current company.	.72	
	CSMsc2	I have looked outside the current workplace for career-related training and/or qualifications.		
	CSMsc3	I have developed skills that will be needed in future career positions in another company.		
	CSMsc4	I have obtained broadly based experience in several different positions/workplaces.		
Investment in Social Capital	CSMhc1	I have introduced myself to people who can influence my career.	.81	(Sturge, et al., 2000)
	CSMhc2	I have made contacts with people who work in areas where I would like to work.		
	CSMhc3	I have asked for career advice from people even when it has not been offered.		
	CSMhc4	I have talked about my career problems with someone when necessary (e.g. family members, friends or important others).		

*® means that the item was negatively worded in the online survey.

** Although it was created in 1983, Stumpf' career exploration scale was consistently applied and tested by following researchers in areas of employability, job seeking effectiveness and graduates' organisational career management (Fugate, et al., 2004; J. Sturges, et al., 2000; Werbel, 2000; Zikic & Klehe, 2006). That was the reason why items of career exploration in the present study were selected from this scale.

In order to fulfill the purpose of the second part of each research question, that is, to explore if individuals' demographic elements affect their levels of endorsement of different career attitudes, career adaptability and implementation of career self-management behaviors, some specific personal information was also requested by the questionnaire. As a New Zealand based empirical study, this section of personal details were designed according to previous New Zealand career research in similar areas (Coulon, 2002; Dalziel, 2007; Dupuis, Inkson, & McLaren, 2005). Moreover, as all participants were from Massey University Palmerton North campus, the personal information necessary included an individual's gender, age band, ethnicity, the college graduated from, qualifications gained upon graduation, and the main resident location subsequent to graduation (see Appendix 2).

4.3 Data Analysis Method

Four statistical methods were used to analyze data with the use of SPSS. Below is a brief definition of each method, and the justification why such methods were chosen. The procedure of analysis using these methods will be covered in the following chapter, along with a presentation of results.

Factor Analysis

Factor analysis is a widely applied statistical technique in social science, which is designed to reduce production of data by using a smaller number of factors or components (Costello, 2005). Due to the fact that the scales used were all derived from previous research, a factor analysis was necessary to select and confirm factors in the newly developed scales before further analysis could be carried out. Extensively used in developing scales in career studies (Briscoe, Hall & Freautschy, 2006; Stumpf, 1983; Smith, 2008; Diemer, 2007), Principle Components Analysis (PCA) was employed to confirm factors derived or adapted for each scale of the career attitude, career adaptability and career self-management constructs. Moreover, as this study was more interested in an empirical summary of the data set rather than a theoretical solution uncontaminated by error variability, PCA was seen as a useful approach to reduce the

number of items in each scale (Pallant, 2007). This method was applied so that these scales could be refined prior to using them in the data analysis process.

Regarding the rotation method for the PCA, an oblimin rotation was utilized to select and confirm factors, instead of a varimax rotation. This was not only because the oblimin rotation was the default in SPSS, but also because researchers of original scales had demonstrated that factors within each original scale were correlated. If a varimax rotation or any orthogonal rotation method was chosen in this case, it would result in the loss of valuable information when making decisions about the final factors to use (Costello, 2005).

According to the procedure of factor analysis using SPSS (Pallant, 2007), major criteria for selecting and confirming factors for constructs of the present study were: 1) the Kaiser-Meyer-Olkin (KMO) value should be no less than 0.6 to make the sample suitable to process factor analysis; 2) each eigenvalue should be greater than 1 when abstracting a factor; 3) each factor should be composed of three items at least, ideally with a loading for each item over 0.6, and each loading should not be less than 0.3. These criteria are applied to each of the three constructs in Chapter 5 presenting the results of factor analysis.

Cronbach's Reliability Test

Cronbach's reliability test is one of the most commonly used statistical tools to check the internal consistency of survey instruments (Santos, 1999). As an important indicator of reliability of a survey instrument, Cronbach's alpha coefficient determines the average correlation of items in a scale. Original Cronbach's alpha coefficients of all items selected are provided in Tables 2-4. However, conducting another Cronbach's reliability test for the three constructs of the present study was still necessary, since they were newly developed instruments, whose internal consistency when compared with the original scales was unknown. In addition, items with a low Cronbach's alpha coefficient were to be deleted at this stage, so that a high inner consistency of items can be obtained, and the scales further developed.

The major criteria when applying Cronbach's reliability test in SPSS were as follows. According to Pallant (2007), for short scales with fewer than ten items (as in this study), the ideal item-to-total correlation was supposed to be greater than .7 to represent an appropriate correlation with the total score of the factor. However, an optimal range for the inter-item correlation within a short scale was .2 to .4. Chapter 5 will provide the results of applying Cronbach's reliability test for each of the three constructs studied.

Descriptive Analysis

There were two reasons to apply descriptive analysis in this study. First, descriptive analysis, especially the use of charts, graphs and histograms, was selected to describe the sample characteristics of participants. Second, in order to answer the three research questions - to what extent recent tertiary graduates hold new career attitudes (protean and boundaryless career attitudes), to what extent they endorse career adaptability and implement career self-management behaviors - descriptive analysis, including mean, standard deviation and frequency analysis, was chosen to be applied to all factors in the three constructs. Accordingly, in Chapter 5, the results of descriptive analysis are respectively divided into two sections: one is the sample characteristics; the other is the results of descriptive analysis.

The following procedure of frequency analysis using SPSS was applied when analyzing each factor of the three constructs. 1) Generating the average score of each participant obtained in a factor, with the formula as "*Total score of each participant obtained in a factor ÷ number of items within this factor*" (see Appendix 10). 2) Generating a histogram from the above results to display the distribution of frequency for all participants in each factor. 3) Interpreting this distribution of frequency so that the research question could be answered. (See tables of results of descriptive analysis for each item in the Appendix 9 for detailed information, including mean, mode, median, standard deviation, variance, range, maximum and minimum).

Independent-samples T-test and One-way ANOVA

There are many statistical techniques to assess differences between groups by testing significant differences. However, in order to address research questions as to whether demographic variables could influence participants' career attitudes, career adaptability and their implementation of career self-management behaviors, independent-samples T-test and one-way ANOVA were selected. In particular, the above questions can be answered by checking if significant differences exist between the mean scores of groups of participants in each factor of the above three constructs. An Independent-samples T-test was applied to demographic variables that divided participants into two groups only (e.g., gender, highest qualification gained – graduate qualification/postgraduate qualification). A one-way ANOVA was performed when a variable divided participants into no less than three groups. Such variables included age, ethnicity, Massey colleges from which participants graduated, and the main resident places they lived after graduation.

Major criteria when interpreting the results generated using SPSS were as follows. 1) If the significance (Sig.2-tailed for independent-sample t-test & ANOVA Sig. between groups for one-way ANOVA) is $p=.05$ or less (e.g., .03, .001), there is a significant difference in the mean scores on the variable for groups. 2) When a significant difference exists, the effect size should be calculated to see the magnitude of the difference between groups. If it was a one-way ANOVA, results of Turkey HSD of the same SPSS analysis should be checked, in order to see where exactly the significant difference exists. Significant difference is indicated when $p < .05$. According to Pallant (2007), formula for eta squared for Independent-samples T-test is $\text{Eta squared} = t^2 \div (t^2 + N_1 + N_2 - 2)$; for one-way ANOVA, $\text{Eta squared} = (\text{Sum of squares between groups}) \div (\text{Total sum of squares})$. When interpreting effect size, .01 indicates a small effect, with .06 seen as a medium effect, and .14 implies a large effect. Results are presented in the section of group comparison in Chapter 5, with some tables in the Appendices.

Chapter 5 – Results

This chapter contains results of SPSS (version 14) data analysis in two parts: 1) a description of sample characteristics, 2) statistic analysis results for factor analysis, reliability tests, descriptive analysis (including mean, standard deviation, and frequency tests), and Independent-samples T-test and one-way ANOVA.

5.1 Sample Characteristics

Taking part in this New Zealand research project, all participants of the online survey were alumni of Massey University, who graduated from the Palmerston North campus in November 2008, with any certificate, diploma or degree. In total, 3548 alumni were invited to participate in the online survey by Massey Alumni Office in Palmerston North. A total of 337 graduates submitted their complete results, which made a 9.4% response rate. The results from the analysis of the sample characteristics are described and tabulated in this chapter and Appendices 4-25.

5.1.1 Gender and Age

Figure 7 on the next page shows the gender and age of participants (Appendix 4 for percentage). Among the 337 participants, 121 (35.9%) were male, and 216 (64.1%) were female. Only one person was younger than 20 years, 69 people were between 20-24 years, and 59 were between 25-29 years. However, 208 participants were over 30, 61.72% of the total. Notably, female participants were more frequent than males in every age band. In the 20-24 and >30 groups, the number of female participants was almost double of the males; while in the 25-29 group, the number of females and males was quite similar.

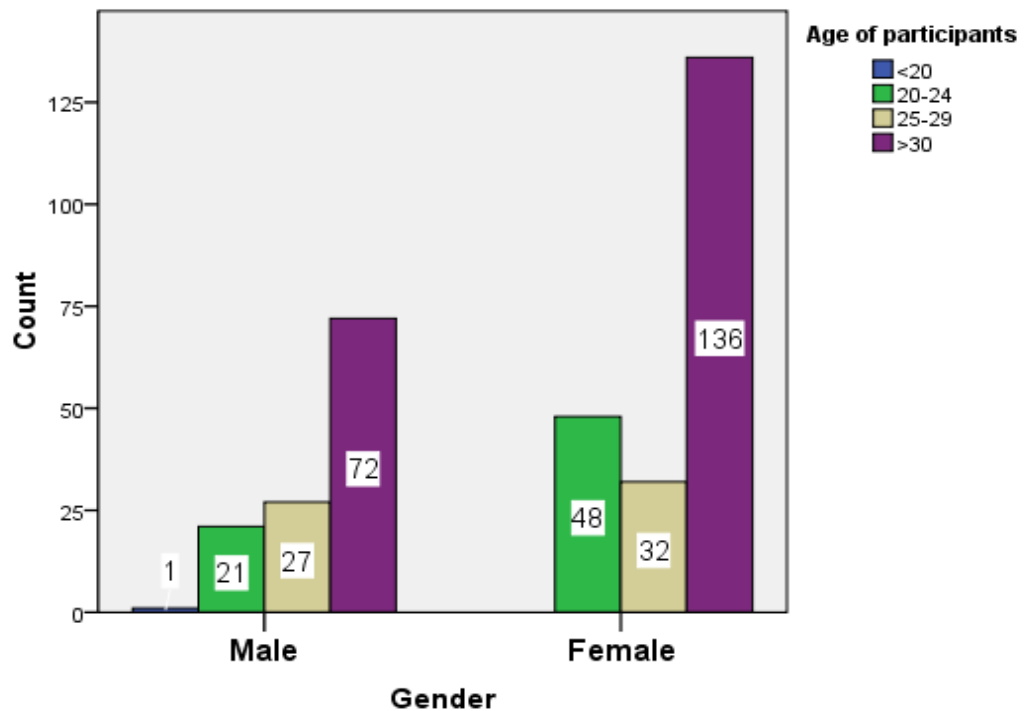


Figure 7: Gender and age of participants

5.1.2 Ethnicity and Highest Qualification

Figure 8 revealed the ethnicities of participants grouped by their highest qualifications gained at Massey University in November 2008 (see Appendix 5 for numbers). This sample of 337 people was composed of 66.8% New Zealand European, 6.5% New Zealand Maori, 0.9% Pacific Island People, 14.8% Asian, and 8% other ethnicities. 1 person (0.3%) chose to “Decline to answer”, and 9 (2.7%) ignored this biographical question. Among the five ethnicity groups, New Zealand European had the largest number of people in obtaining university qualifications, followed by the Asian group.

Other groups formed a very small percentage in contributing data for this biographic question.

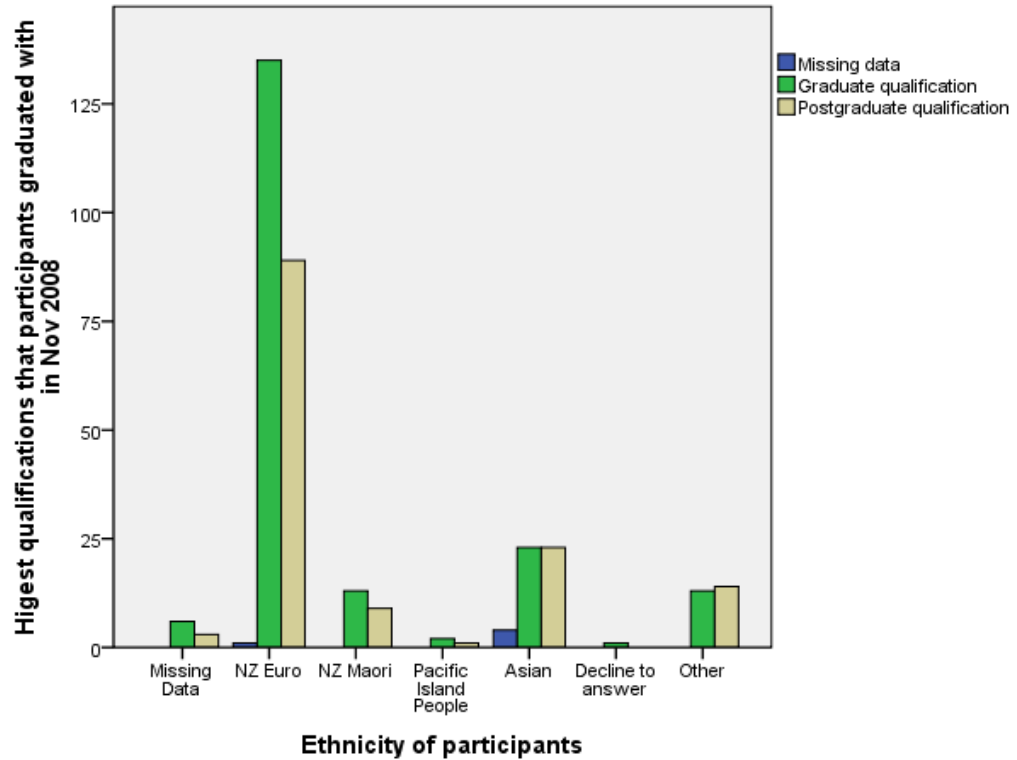


Figure 8: Ethnicity of participants grouped by their highest qualifications

5.1.3 Colleges from Which the Participants Graduated and Main Resident Places after Graduation

Figures 9-10 displays the colleges that the participants graduated from as well as their main resident places after graduation. Among the 337 participants, 34.64% of participants were from the College of Business (115 people), 25% from the College of Sciences, 21.69% from the College of Humanities & Social Sciences, 18.37% from the College of Education and only 0.30% from the College of Creative Arts. In the

following frequency and comparison analysis, however, colleges from which participants graduated from are divided into two groups only: business and non-business colleges, since the number of graduates from the College of Creative Arts is too small to be statistically analysed.

After graduation, 37.43% of participants (125 people) lived in small to medium size NZ cities (e.g. Palmerston North), 32.34% in large NZ cities, 13.47% in NZ towns and rural areas, and 11.98% in large cities overseas. Moreover, Appendix 6 reveals that 46 out of the 115 business graduates chose to live in large cities either in NZ or overseas. Interestingly, among science graduates, the largest proportion chose to live in small to medium size NZ cities (40 people).

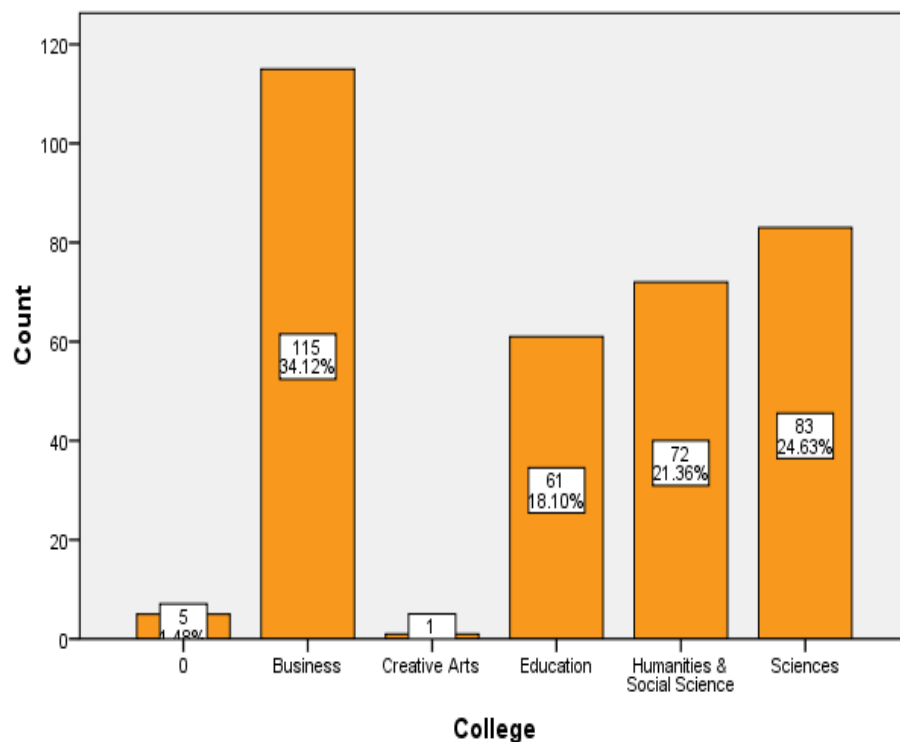


Figure 9: Colleges from which participants graduated

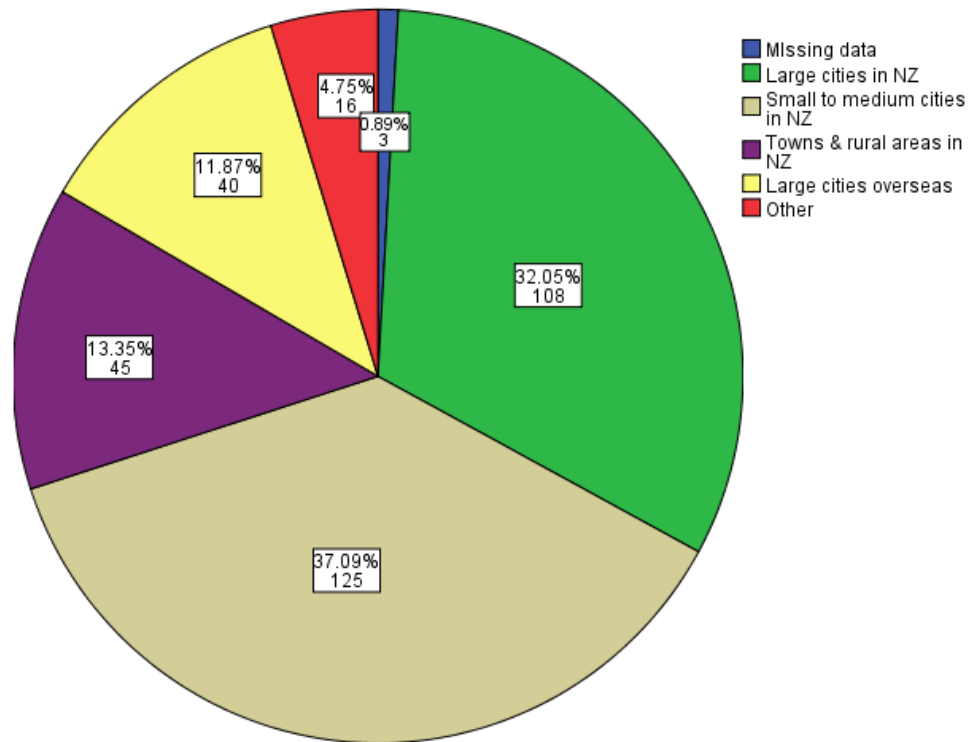


Figure 10: Main resident places of participants after graduation

5.2 Results of Statistical Analysis

5.2.1 Factor Analysis

As described in Chapter 3, Principle Components Analysis (PCA) was applied to confirm factors in each of the three constructs of career attitudes, career adaptability and career self-management behaviours. Following are the results gained from the major analysis criteria used in Chapter 4.

Career Attitudes

The 17 items of the Protean and Boundaryless career attitudes were subjected to PCA with Oblimin rotate method using SPSS Version 14. As presented in Table 5, the KMO value was .77, exceeding the recommended value of .6. Four main factors, with eigenvalues as 3.785, 2.475, 2.144 and 1.693 (all exceeding 1) were extracted by PCA, with two factors for the Protean Career Attitude and another two for the Boundaryless Career Attitude. In Appendix 7, the scree plot showed a clear break after the fourth component, and this four-component solution was also aided by a total of 59.39% of the explained variance, with each component showing a number of strong loadings and almost all variables loading substantially on only one component.

This result confirms that the same four factors should be used in the present study as the factors used in the original Protean and Boundaryless scales designed by Briscoe and Hall (2006). These factors are entitled protean Self-directed, protean Value-driven attitude, Boundaryless Mindset and Organizational Mobility. Two items were deleted due to their relatively low loadings compared with other items within respective factors (see Table 5 on the next page).

Table 5: Results of factor analysis for the construct of career attitudes

KMO = .771						
Factors	Items	Loadings			Initial Eigenvalues	
		Pattern Coefficients	Structure Coefficients	Communalities	Eigenvalue	Cumulative % of Explained Variance
Boundaryless Mindset	CATBbm3	.830	.811	.611	3.785	22.27%
	CATBbm4	.817	.819	.637		
	CATBbm2	.800	.797	.662		
	CATBbm1	.787	.779	.672		
	CATBbm5	.553	.598	.404 (delete item)		
Protean Self-directed	CATPsd2	.866	.855	.733	2.475	36.83%
	CATPsd1	.856	.853	.733		
	CATPsd3	.787	.770	.599		
	CATPsd4	.693	.738	.579		
Boundaryless Mindset	CATBom2r	.844	.832	.691	2.144	49.44%
	CATBom1r	.841	.824	.698		
	CATBom4r	.707	.726	.504		
	CATBom3r	.695	.707	.548		
Protean Value-driven	CATPvd2	.792	.794	.500	1.693	59.39%
	CATPvd3	.707	.697	.640		
	CATPvd1	.663	.694	.489		
	CATPvd4	.641	.627	.398 (delete item)		

Career Adaptability

Appendix 7 displays results of factor analysis for the construct of career adaptability. The KMO value was .83, which indicated PCA was applicable. Although only three components were suggested to be extracted by SPSS, a decision of four factors was made due to three main reasons. First, the two original studies suggested there should be at least four factors comprising the career adaptability conception (Diemer & Blustein, 2007; Smith, *et al.*, 2008). Second, the scree plot in Appendix 7 showed an obvious drop-off after the fourth component. This was supported by the eigenvalue of the fourth component in the first table of Appendix 7, which made the cumulative % of explained variance up to 66.50%. The third reason might be the items that were negatively worded in the present study. In the Component Matrix in Appendix 7, with high loadings, all negatively worded items from the components of career decision making and career resilience were loaded onto Component 1.

Accordingly, therefore, a four-factor solution was more appropriate than a three component one. Factors were named as Career Decision-making, Career Planning, Career Resilience and Adapt to Changes, the same as in the two original studies (Diemer & Blustein, 2007; Smith, *et al.*, 2008). Although a few communality loadings were less than 0.6, only one item (CADAc4) was deleted at this stage, as a certain number of items within a factor was necessary for validity of analysis.

Career Self-management Behaviors

Appendix 8 displays the results of factor analysis of the construct of career self-management behaviours, including the item loadings, eigenvalues and cumulative % of explained variable. Four components were extracted after the PCA analysis, as the KMO was over 0.86 and eigenvalues were above 1. The first table in Appendix 8 showed a 61.66% variance, and the subsequent component matrix revealed the presence of a simple structure, with all components showing a number of strong loadings and many variables loading substantially on only one component. The four factors confirmed under the construct of Career Self-management behaviours were named as Career Exploration, Boundary Management, Investment in Human Capital, and

Investment in Social Capital. Although a few communalities loadings were below .6, only one item (CSMhc2) was deleted, in order to keep a minimum number of items for further analysis.

5.2.2 Reliability Test

After factors of all three constructs were confirmed, a reliability test was applied to ensure internal consistency within each factor. Below was a report of the reliability test.

Career Attitudes

Table 6 below shows that, except for one item in the Protean Value-driven factor, all item-total correlation values were over .5, and the Cronbach alpha for all factors were above .7. Therefore, all factors had good internal consistency, especially considering they were all short scales with less than ten items within each factor.

This result was proved to be an improvement in the quality of survey instruments of the present study. Accordingly, after reducing items with low loadings in the above PCA test, Cronbach Alpha values of Boundaryless Mindset and Protean Value-driven factors were increased from .820 and .660 to .831 and .704.

Table 6: Results of reliability test for the construct of career attitudes

Factors	Items	Item-to-total Correlation	Cronbach Alpha
Boundaryless Mindset	CATBbm1	.633	.831 (.820)
	CATBbm2	.675	
	CATBbm3	.668	
	CATBbm4	.661	
Organisational Mobility	CATBom1r	.610	.774
	CATBom2r	.653	
	CATBom3r	.516	
	CATBom4r	.531	
Protean Self-directed	CATPsd1	.713	.822
	CATPsd2	.714	
	CATPsd3	.600	
	CATPsd4	.567	
Protean Value-driven	CATPvd1	.553	.704 (.660)
	CATPvd3	.631	
	CATPvd4	.405	

Career Adaptability

Below Table 7 illustrates that, in the Career Adaptability construct, except for one item in the Career Planning factor, all item-to-total correlation values were over .5, and Cronbach alpha were all over .7 for all four factors. It confirms that deleting the item CADAc3 in the factor analysis stage increased the Cronbach alpha value for “Adapt to Changes” factor from .784 to .787. To improve further the questionnaire, item CADMp1 with a low reliability under .5 was deleted at this stage, so that the Cronbach alpha coefficient for factor Career Planning increased from .772 to .782.

Table 7: Results of reliability test for the construct of career adaptability

Factors	Items	Item-to-total Correlation	Cronbach Alpha
Career Planning	CADMp1	.435 (delete)	.782 (.772)
	CADMp2	.673	
	CADMp3	.576	
	CADMp4	.625	
Career Decision-making	CADMd1r	.735	.852
	CADMd2r	.680	
	CADMd3r	.753	
	CADMd4r	.612	
Career Resilience	CADAr1r	.555	.794
	CADAr2r	.704	
	CADAr3r	.665	
Adapt to Changes	CADAc1	.607	.787 (.784)
	CADAc2	.585	
	CADAc3	.697	

Career Self-management Behaviors

Table 8 confirms that all four factors in Career self-management construct had good inner consistency, as all Cronbach alpha values were over .7. However, the retrieval of item CSMhc2, after the factor analysis caused a slight reduction in this factor's Cronbach alpha coefficient from .720 to .704. This might be because the deletion of this item made the sub-scale contain only three items altogether, and it was common for a short scale to have relatively lower reliability value. Moreover, although a few item-to-total correlation values were less than .5, no further changes to this construct of the survey was made, to ensure a minimum number of three items within a factor could be maintained.

Table 8: Results of reliability test for the construct of career self-management behaviours

Factors	Items	Item-to-total Correlation	Cronbach Alpha
Career Exploration	CSMexp1	.581	.844
	CSMexp2	.473	
	CSMexp3	.579	
	CSMexp4	.559	
	CSMexp5	.704	
	CSMexp6	.654	
	CSMexp7	.656	
Investment in Human Capital	CSMhc1	.553	.704 (.720)
	CSMhc3	.631	
	CSMhc4	.405	
Investment in Social Capital	CSMsc1	.614	.811
	CSMsc2	.731	
	CSMsc3	.666	
	CSMsc4	.516	
Boundary Management	CSMbm1r	.641	.761
	CSMbm2r	.733	
	CSMbm3r	.426	

5.2.4 Final Items for Further Analysis

After the above factor analysis and reliability test, 45 items out of the total 50 items in the online survey questionnaire for the three constructs of the present study were finally confirmed for further analysis (see Tables 9-11 below). Tables 9-11 also presented mean and standard deviation for each factor. Based on such data as well as more detailed data shown in Appendix 9-10, further frequency analysis and one way ANOVA analysis were conducted, in order to answer the three research questions of the present study.

Table 9: Final items of each factor in the construct of career attitudes, with mean and standard deviation of factors

Factor	Item	mean	Standard deviation
Self-directed	CATPsd1	4.15	.71979
	CATPsd2		
	CATPsd3		
	CATPsd4		
Valve-driven	CATPvd1	3.34	.70192
	CATPvd2		
	CATPvd3		
Boundary-less mindset	CATBom1r	3.95	.62075
	CATBom2r		
	CATBom3r		
	CATBom4r		
Organizational mobility	CATBom1	3.50	.83250
	CATBom2		
	CATBom3		
	CATBom4		

Table 10: Final items of each factor in the construct of career adaptability, with mean and standard deviation of factors

Factor	Item	mean	Standard deviation
Career Planning	CADMp2	3.42	.81964
	CADMp3		
	CADMp4		
Career Decision-making	CADMd1r	3.43	.93153
	CADMd2r		
	CADMd3r		
	CADMd4r		
Career Resilience	CADAr1r	3.43	.87656
	CADAr2r		
	CADAr3r		
Adapt to Changes	CADAc1	3.98	.61886
	CADAc2		
	CADAc3		

Table 11: Final items of each factor in the construct of career self-management behaviours, with mean and standard deviation of factors

Factor	Item	Mean	Standard Deviation
Career Exploration	CSMexp1	3.08	.90557
	CSMexp2		
	CSMexp3		
	CSMexp4		
	CSMexp5		
	CSMexp6		
	CSMexp7		
Boundary management	CSMbm1r	3.20	1.02503
	CSMbm2r		
	CSMbm3r		
Investment in Human Capital	CSMhc1	3.03	.94459
	CSMhc3		
	CSMhc4		
Investment in Social Capital	CSMsc1	2.72	1.00420
	CSMsc2		
	CSMsc3		
	CSMsc4		

5.2.5 Results of Frequency Analysis

Responding to answer the three research questions: to what extent recent tertiary graduates hold new career attitudes (protean and boundaryless); to what extent they endorse career adaptability; and to what extent they manage their own careers, a frequency analysis was applied to the average total scores that each participant obtained for each factor. Below are the reports of results generated in SPSS according to the analytic procedures outlined in Chapter 4. Moreover, Appendix 9 and Appendix 10 provide detailed information for averages scores participants reached in each factor of the three constructs. Table 15 at the end of this chapter reports a summary of results of all frequency analysis in this part.

Career Attitudes

Four frequency histograms (Figures 11-14) were reported responsively below to reveal to what extent that recent tertiary graduates hold protean and boundaryless career attitudes.

Figure 11 gives the distribution of frequencies of 337 participants' average scores of their protean self-directed attitude. The mode was 5.00 (70 participants), and median was 4.25 (see Appendix 9). Sixty participants received 4.00 as their average for this factor, and the mean of all 337 participants was 4.14. Among all the participants, only one person achieved 1.00 average score in this factor, and only 29 people in total obtained 3.25 or below as their average scores. Therefore, as 1 point represents "strongly disagree" and 5 represents "strongly agree", it is clear that the most of the 337 sample graduates hold high protean self-directed attitudes.

Figure 12 displays a normal distribution of frequencies of participants' average scores of their protean value-driven attitude. Three was the average score for 69 people and it was also the mode for this factor. Mean and median were quite similar, respectively 3.32 and 3.33. Only one person scored 1.33 as an average for this factor, and 12 scored 5.00. As most participants' average scores were between 2.67 to 4.00, the frequency

chart illustrated that the sample graduates held protean value-driven attitudes to a certain extent.

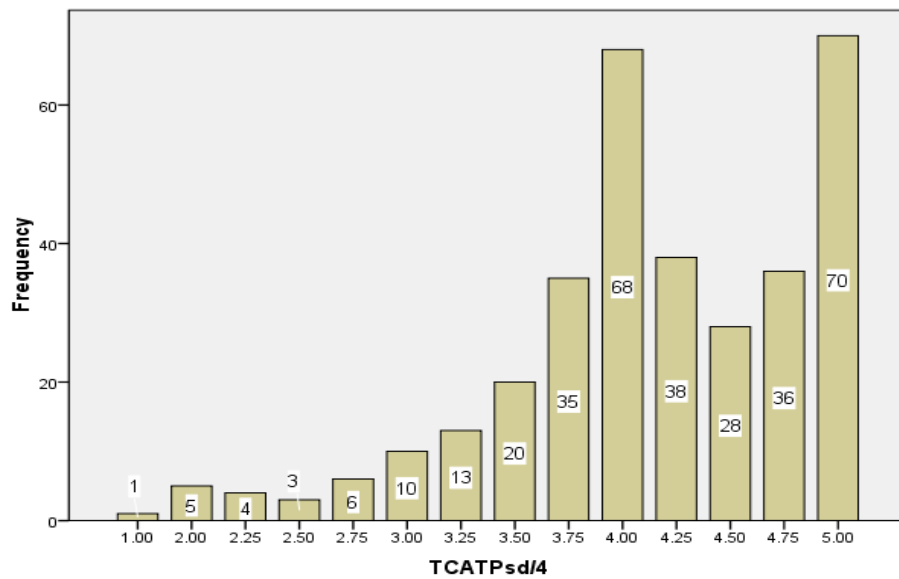


Figure 11: Frequency distribution of participants' average scores for the protean self-directed factor

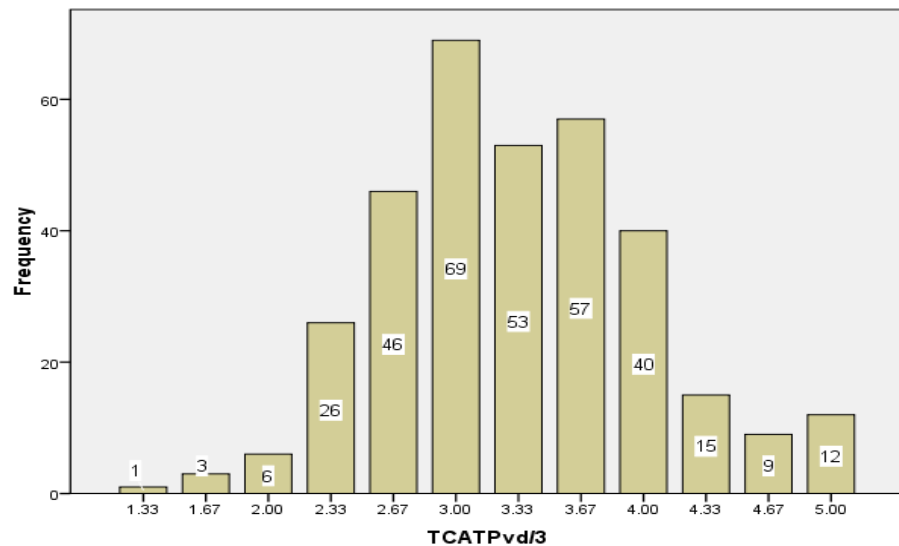


Figure 12: Frequency distribution of participants' average total scores for the protean value driven factor

Figure 13 shows the normal frequency distribution of participants' average scores for the boundaryless mindset subscale of the career attitude construct. With mean, median and mode as 3.93, 3.33 and 4.00, it illustrates that participants' boundaryless mindset had risen to a considerable level. It was also clear that 37 participants (over 10%) got 5.00 as their average score for this factor, which meant that they scored 5.00 for all the three items in this subscale.

Figure 14 shows the normal frequency distribution of participants' average scores for the organizational mobility subscale. Fifty-five received 3.50 as their average score, which made 3.50 the mode of this chart. Mean and mode were the same (3.50), which demonstrated the participants held boundaryless attitudes in terms of organizational mobility to a considerable level. Twenty-one achieved 5.00 as their average score for this factor, which showed their very high level of boundaryless attitude in terms of organizational mobility.

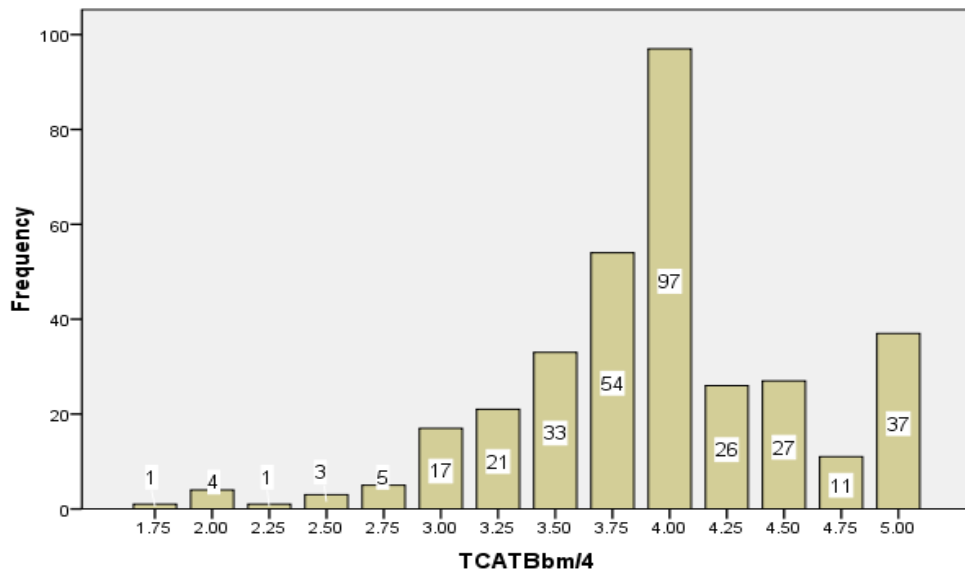


Figure 13: Frequency distribution of participants' average scores for the boundaryless mindset factor

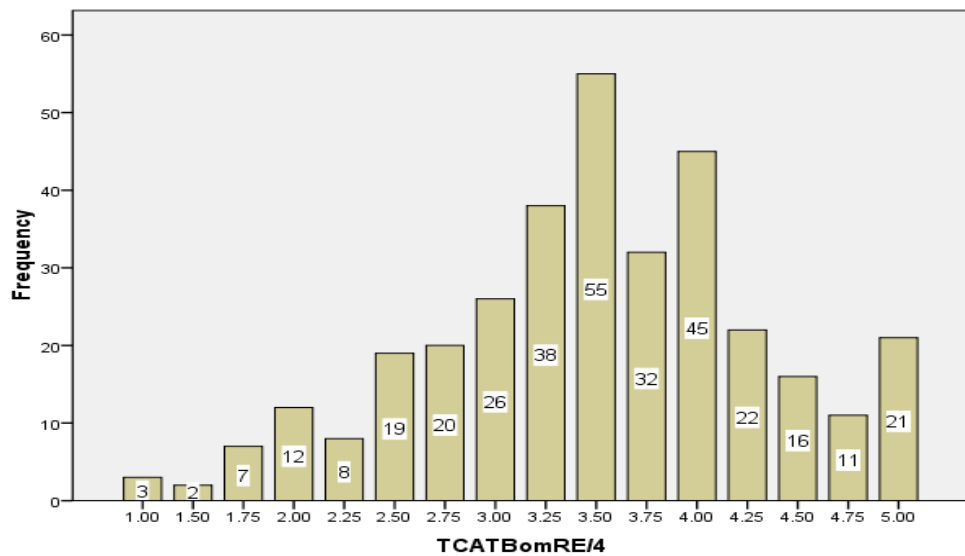


Figure 14: Frequency distribution of participants' average scores for the organizational mobility factor

Career Adaptability

Four histogram charts (Figures 15-18) record the frequency distribution of average scores that participants gained for each of the four factors within the career adaptability construct: career planning, career decision making, career resilience and adaptability to changes. According to the scales, minimum and maximum average scores could be 1.00 and 5.00, representing the lowest and highest levels of participants' career adaptability.

Figure 15 represents the frequency distribution of average scores that participants reached in the career planning subscale. The mode was 3.67 of this bar chart (60 people), followed by 3.33 and 3.00 (both 50 people). Mean and median for this distribution were 3.42 and 3.33, and standard deviation was .820. It was clear from the chart that most participants reported a considerable level of career planning.

Figure 16 presents the frequency distribution of average scores of participants in the career decision making subscale. It was notable that 65 people reached 4.00 (mode) as their average score for this factor, and the mean and median of this chart were 3.43 and 3.50 respectively. Twenty-four people scored 5.00 as their average, which was also noteworthy. Thus, it illustrated that the sample participants had reached a considerable high level of career decision making.

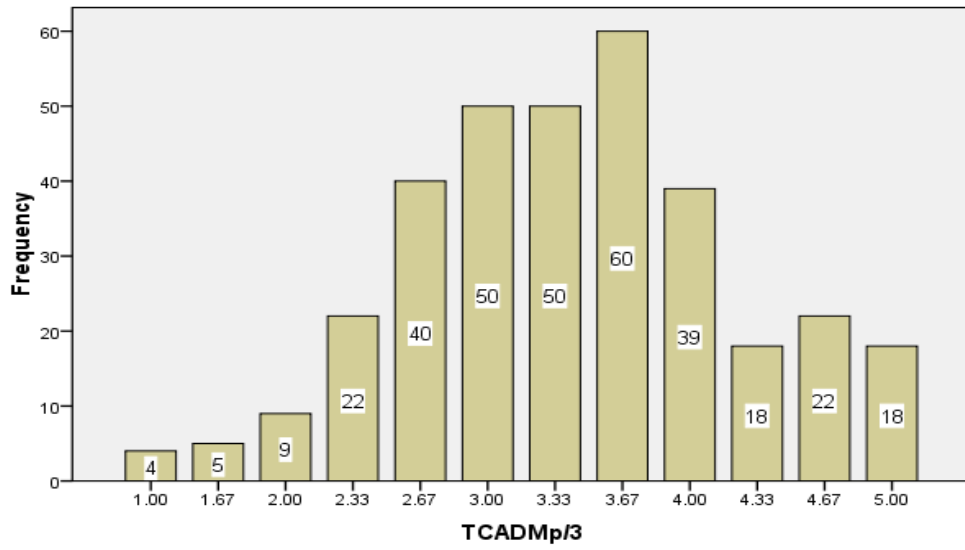


Figure 15: Frequency distribution of participants' average scores for the career planning factor

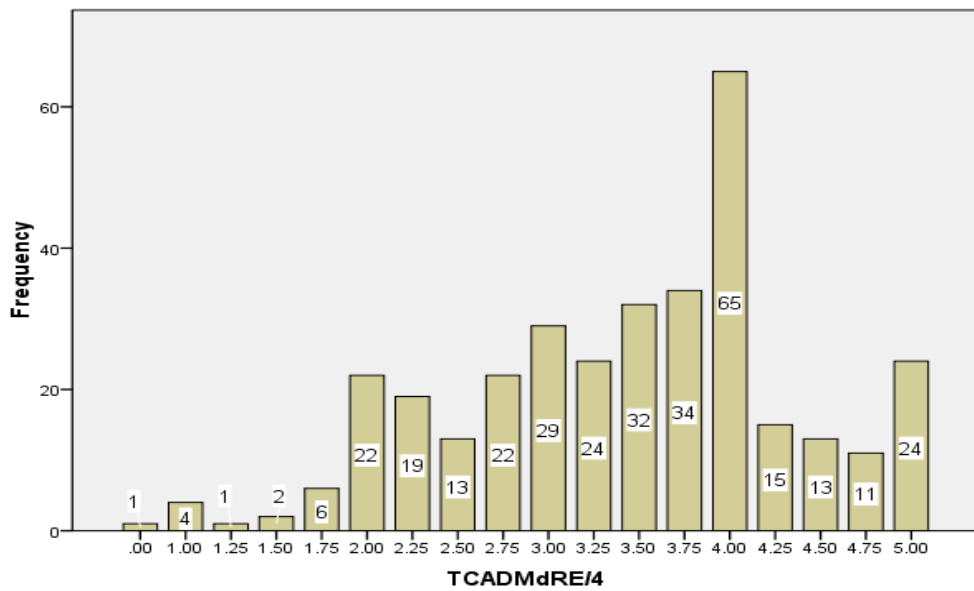


Figure 16: Frequency distribution of participants' average scores for the career decision-making factor

Figure 17 presents the frequency distribution of participants' average scores for the career resilience factor. With 90 people reaching 4.00 as their average score, 4.00 was the mode which illustrated a fairly high level of career resilience of the sample. Also, the mean (3.43) and the median (3.66) displayed in the Appendix 10 demonstrated the same result. Thus, the sample participants' career resilience was at a significant high level.

Figure 18 describes the frequency distribution of the participant's average scores for their adaptability to changes. The mode 4.00 was unexpectedly high (151 people out of 337 participants), and 42 people reached 5.00 as their average score for this factor. With a mean of 3.98, and the median at 4.00, it demonstrated that participants' ability to change was considerable.

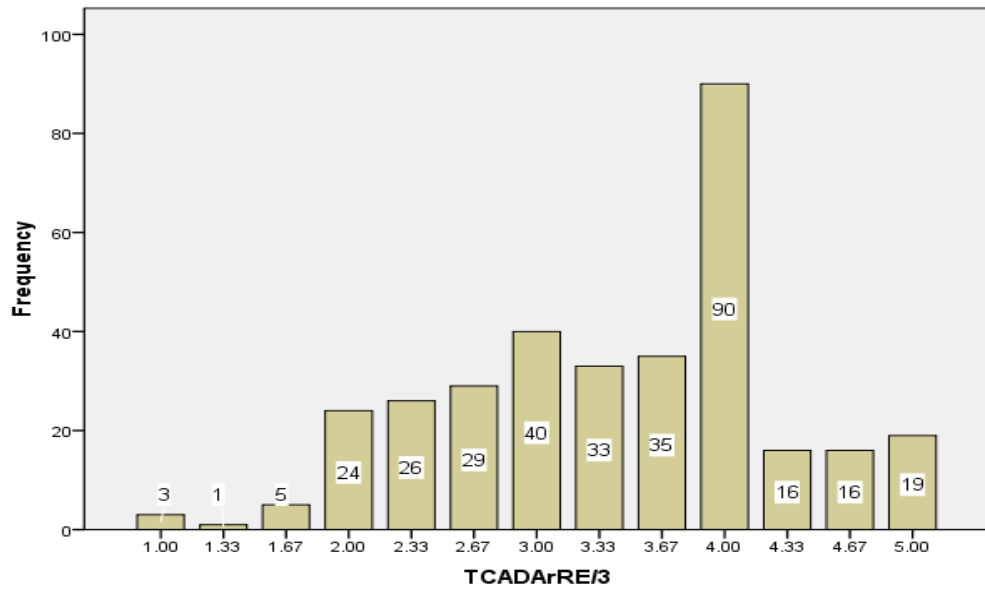


Figure 17: Frequency distribution of participants' average scores for the career resilience factor

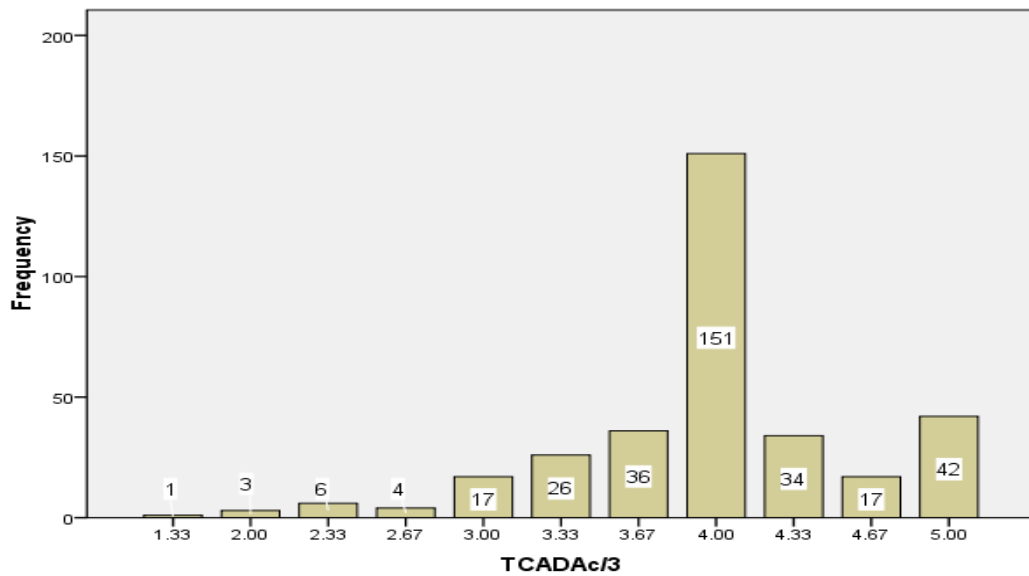


Figure 18: Frequency distribution of participants' average scores for adaptability to changes factor

Career Self-Management Behaviors

Four charts (Figures 19-22) present frequency distributions of the average scores for each factor under the construct of career self-management behaviors.

Figure 19 displays for the frequency distribution of average scores for participants' career exploration, including career self-exploration and environmental exploration. Appendix 10 shows a mode of 3.43 (26 people), mean 3.07 and median 3.14. Thus it was clear that most participants employed some level of career exploration.

Figure 20 reveals the frequency distribution of average scores for participants' boundary management. With a mean of 3.20, median 3.00 (47 people) and mode 3.00, it confirmed that most participants embodied some level of boundary management behaviors. However, it was interesting that 31 people scored 5.00 as their average in this factor, which meant that nearly 10% of all participants were greatly involved in boundary management between their work and non-work life.

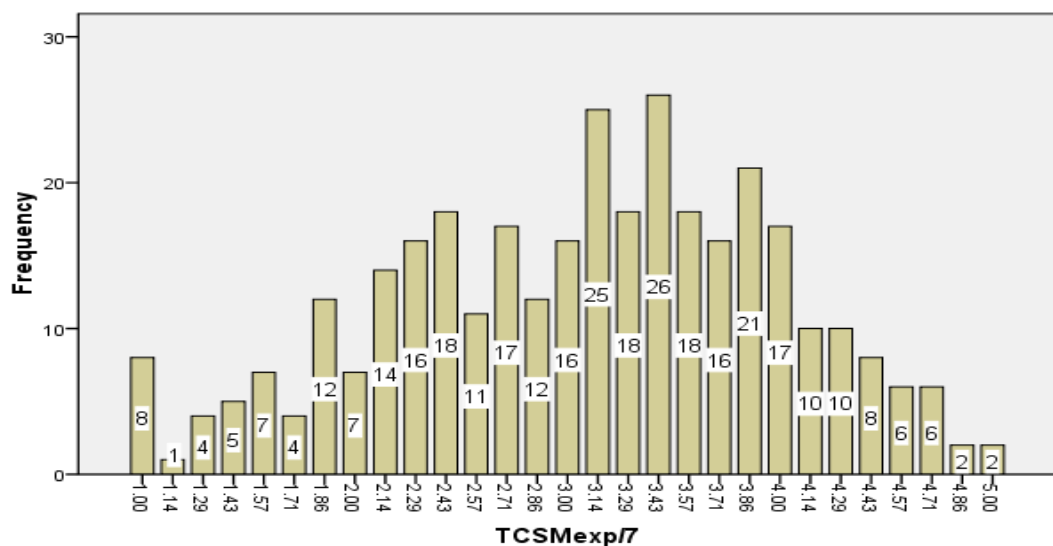


Figure 19: Frequency distribution of participants' average scores for the career exploration factor

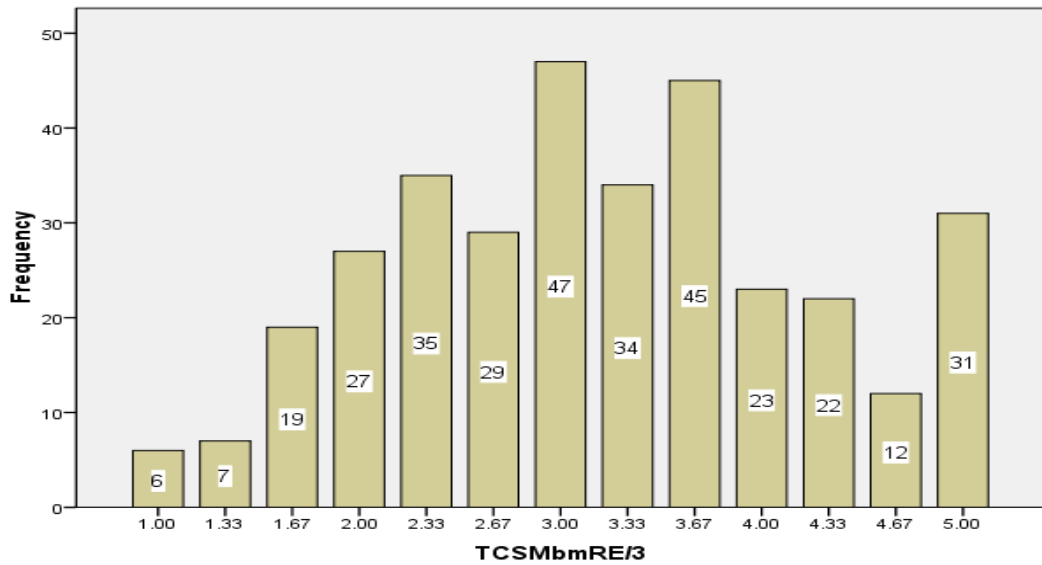


Figure 20: Frequency distribution of participants' average scores for the boundary management factor

Figure 21 displays the frequency distribution of participants' average scores of the investment in the human capital factor. Forty-nine people scored 3.00 (mode), followed by 43 who scored 3.67, and 41 people scored 2.33. Mean and median for this chart were 3.03 and 3.00, which confirmed it as a standard normal distribution. This indicated demonstrated that most participants had invested in their human capital to some level, and some to a considerable high level.

Figure 22 shows the frequency distribution of participants' average scores of their investment in the social capital factor. A total of 36 people scored 3.00 as average, and another 36 people scored 2.00, which caused multiple modes to exist. Also, the mean and median were quite similar, with the former as 2.72 and the latter as 2.75. Thus, the figure illustrated that the majority of participants invested in their social capital to a limited extent, although a few invested significantly more.

Based on the above frequency analysis, a summary of the above results is extracted and provided at the end of this chapter (Table 15).

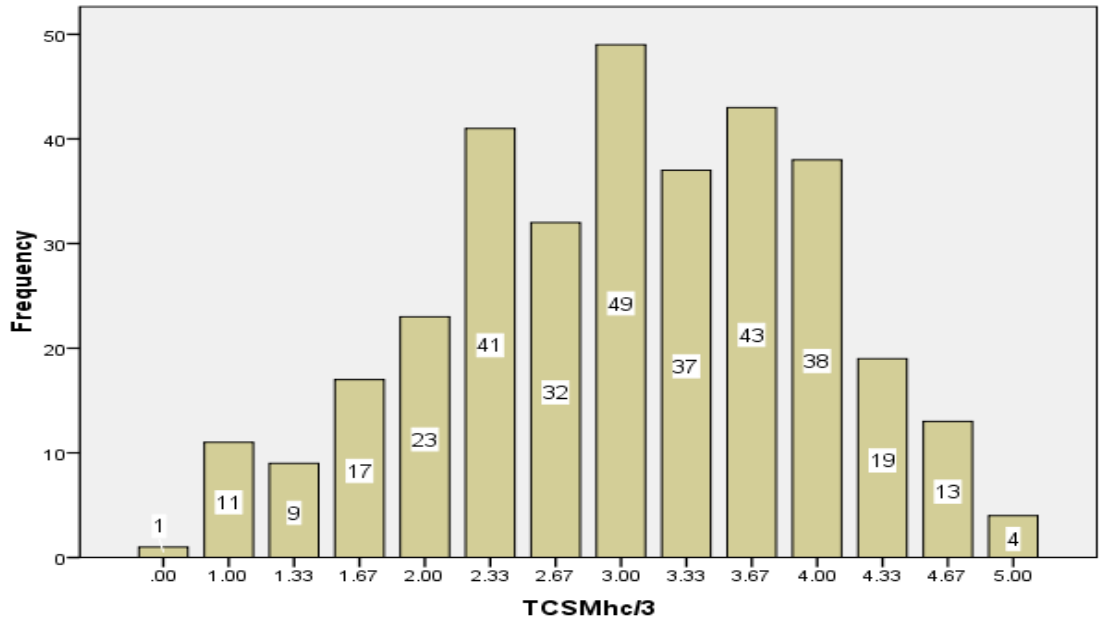


Figure 21: Frequency distribution of participants' average scores of the factor for investment in human capital

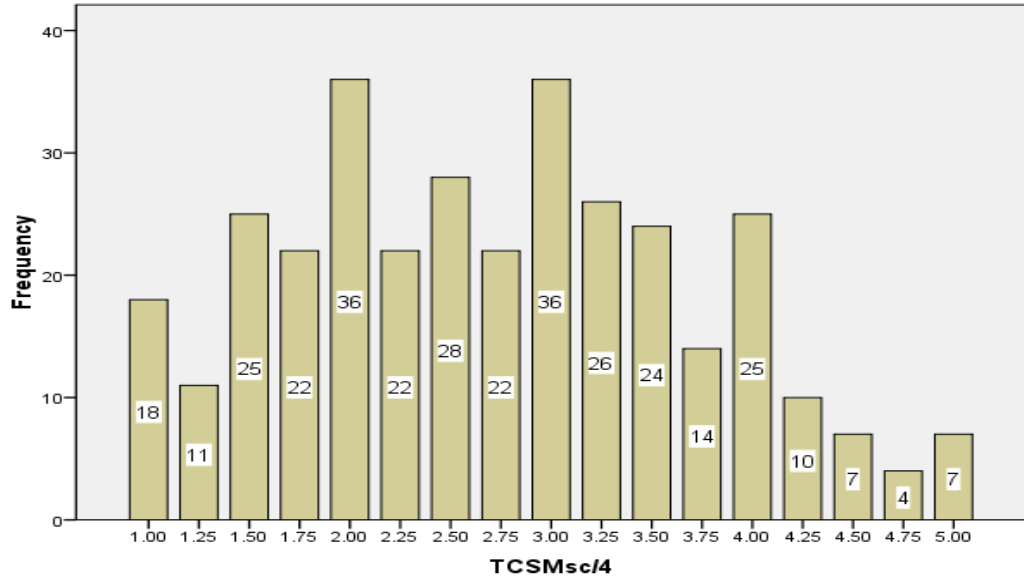


Figure 22: Frequency distribution of participants' average scores of the factor for investment in social capital

5.2.6 Results of Group Comparison

As confirmed in Chapter 4, this section of analysis aims to answer the research question: whether demographic variables could influence recent tertiary graduates' career attitude, career adaptability and career self-management behaviors. To check for any significant differences between different groups divided by gender, highest qualification gained, age, ethnicity, or the college that participants graduated from, Independent-samples T-test and one-way ANOVA were applied to each factor for all three constructs. Following are the results reporting important parameters from these analyses, following the procedure and criteria previously delineated in Chapter 4. Moreover, a summary of results for this section is presented in Table 16 at the end of this chapter.

Demographic Variables and Career Attitudes

Gender

An independent-samples t-test was conducted to compare the average scores in Protean Self-directed, Protean value-driven, Boundaryless Mindset and Organizational Mobility respectively for 121 males and 216 females. Table 12 on the next page reveals that all Sig.(2-tailed) were over .05. Thus, there were no significant differences in these four factors for male and female participants.

Table 12: Results of independent-samples t-test between gender groups for the construct of career attitudes

<i>P</i> = .05							
Factor	Gender	Mean	Std Deviation	T	Sig. (2-tailed)	Significant Difference (SD)	Eta squared if SD exists
Protean Self-directed	Male	4.18	.74426	.677	.499	None	–
	Female	4.13	.70669				
Protean Value-driven	Male	3.36	.72596	.655	.513	None	–
	Female	3.31	.68909				
Boundaryless Mindset	Male	3.98	.60775	.872	.384	None	–
	Female	3.91	.62823				
Organizational Mobility	Male	3.49	.81069	-.136	.892	None	–
	Female	3.50	.84632				

Age

One-way between groups ANOVA was conducted to explore the influence of age on average scores of career attitudes: Protean Self-directed, Protean value-driven, Boundaryless Mindset and Organizational Mobility. Participants were divided into three age groups (20-24 years old, N=70; 25-30 years old, N=59; and >30 years old, N=208). Appendix 11 showed that a significant difference existed in the Protean Value-driven factor among the three age groups ($p = .008$). Despite reaching statistical significance, the actual difference in mean scores between these groups was quite small, since the effect size, calculating using eta squared, was only .028. No significant difference existed in the other three factors among different age groups.

Ethnicity

Appendix 12 displays the results of any significant difference in career attitudes caused by ethnic groups. A one-way ANOVA was conducted to explore the impact of ethnicities on recent tertiary graduates' protean self-directed, value-driven, boundaryless mindset and organizational mobility. Participants were divided into five ethnicity

groups: NZ Euro (N=225), NZ Maori (N=22), Pacific Island people (N=3), Asian (N=50), and the additional group of missing data and all unqualified answers (N=37). From Appendix 12, it can be seen that there was a significant difference at the $p < .05$ level in the factor of Organizational Mobility factor ($p = .019$). However, despite this statistical significant difference, the actual difference in the mean scores between these groups was small, as eta squared was only .035. The mean score of Asian and NZ European people was significantly different ($p = .015$). No significant difference was found in the other three factors.

Participants' Highest Qualification

Appendix 13 displays the results of significant difference in career attitude caused by participants' highest qualification gained at Massey University. A one-way ANOVA was conducted to explore the impact of the highest qualification a graduate gained on factors of the constructs of career attitudes. Participants were divided into three groups: graduate qualification holders (N=193), postgraduate qualification holders (N=139) and the group of missing data (N=5). There was no significant difference at the $p < .05$ level between these groups in the above four factors. Thus, the highest qualifications of participants gained when graduation had no significant difference upon their career attitudes.

Colleges from which Participants Graduated

Appendix 14 presents the results of the One-way ANOVA on whether a participant's college he or she graduated from would influence their career attitudes. Participants were divided into three groups: Business graduates, N=115; Non-business graduates, N=217; and Missing data, N=5. No statistical significant difference was found between these groups. Hence, such factors did not make any significant difference upon their career attitudes.

Main Resident Places after Graduation

Appendix 15 presents the results of One-way ANOVA on whether main resident places of participants after graduation would influence their career attitudes. Participants were

divided into six groups: large NZ city residence, N=108; small/medium NZ city residence, N=125; NZ towns & rural area residence, N= 34; large overseas cities' residence, N= 40; other places, N=16; and Missing data, N=3. The results demonstrate that there was a significant difference at the $p < .05$ level in the boundaryless mindset factor ($p = .015$). However, despite the statistically significant difference, the actual difference in the mean scores between these groups was medium (eta squared = .042). Moreover, this significant difference only existed between groups of small/medium NZ city residents and large NZ residents ($p = .015$). No significant difference was found in any of the other three factors.

Demographic Variables and Career Adaptability

Gender

Table 13 displays the results of an independent-samples t-test between male and female groups for the four factors of career planning, career decision-making, career resilience and adaptability to changes, under the construct of career adaptability. Sig.(2-tailed) of career resilience was less than .05 for the factors of career resilience ($p = .048$) and adaptability to changes ($p = .014$). This indicates that significant difference existed in these two factors between the male and female groups. No significant difference was found in the other factors.

Table 13: Results of independent-samples t-test between gender groups for the construct of career adaptability

<i>P</i> = .05							
Factor	Gender	Mean	Std Deviation	T	Sig. (2-tailed)	Significant Difference (SD)	Eta squared if SD exists
Career planning	Male	3.40	.82878	-.255	.799	None	–
	Female	3.42	.81629				
Career decision-making	Male	3.52	.84666	1.238	.217	None	–
	Female	3.39	.97460				
Career resilience	Male	3.56	.89586	1.987	.048	Significant Difference	Eta = .012 (small effect)
	Female	3.36	.85956				
Adaptability to changes	Male	4.09	.60434	2.471	.014	Significant Difference	Eta = .018 (small effect)
	Female	3.92	.61964				

Age

Appendix 16 was the result of one-way ANOVA among different age groups on the factors of career planning, career decision-making, career resilience and adaptability to changes of the career adaptability construct. Participants were divided into three age groups (20-24 yrs, N=70; 25-30 yrs, N=59; and >30 yrs, N=208). A significant difference at the $p < .05$ level in the factor of career decision-making was found ($p = .022$). Despite reaching statistical significance, the actual difference in mean scores between these groups was small (eta square = .021). Significant difference existed only between the 25-30 years old group and the >30 years old group in the factor of career decision-making ($p = .020$). No significant difference was found in the other three factors among age groups.

Ethnicity

Appendix 17 shows the results of one-way ANOVA in the construct of career adaptability influenced by participants' ethnicity groups. No significant difference at the $p < .05$ level within these factors was found. Therefore, ethnicity did not influence participants' career adaptability.

Highest Qualification

Appendix 18 demonstrated the results of one-way ANOVA in career adaptability influenced by participants' highest qualification gained in November 2008. No significant difference at the $p < .05$ level was found in any of the four factors under the construct of career adaptability. Thus, whether participants held postgraduate qualifications or graduate qualifications caused no significant difference in their career adaptability.

College of Graduation

Appendix 19 displays results of the one-way ANOVA on whether colleges from which the participants graduated could affect their career adaptability. Participants were divided into three groups: graduates of College of Business (N=115), graduates of Non-business colleges (N=217), and Missing data (N=5). There was no significant difference at the $p < .05$ level existing in any factor of the construct of career adaptability. Therefore, the college that a participant graduated from did not make any significant difference in their career adaptability.

Main Residence after Graduation

Appendix 20 displays the results of one-way ANOVA on whether participants' main resident places after graduation would influence their career adaptability. A significant difference at the $p < .05$ level of by resident places influenced the career decision-making factor ($p = .023$). However, despite the statistic significant difference, the actual difference in the mean scores between these groups was small (eta squared = .038). Tukey HSD test indicated that the mean score of small/medium NZ city residence and large NZ residence groups was significantly different ($p = .015$). Furthermore, no significant difference was found in the other three factors. Therefore, significant difference only existed in the mean scores of the career decision-making factor, and the actual difference caused by residence places was small.

Demographic Variables and Career Self-management behaviors

Gender

Table 14 is the result of an independent-samples t-test on whether gender could influence the four factors of career exploration, boundary management, investment in one's human capital and investment to one's social capital, in the construct for career self-management behaviors. Sig.(2-tailed) for all four factors were above .05, which meant there was no significant differences between male and female participants. Thus, gender did not affect recent tertiary graduates' career self-management behaviors.

Table 14: Results of significant difference in career self-management caused by gender

<i>P<.05</i>							
Factor	Gender	Mean	Std Deviation	T	Sig. (2-tailed)	Significant Difference (SD)	Eta squared if SD exists
Career exploration	Male	3.09	.90792	.124	.901	None	–
	Female	3.07	.90634				
Boundary management	Male	3.10	.97090	-1.25	.212	None	–
	Female	3.25	1.05274				
Investment in human capital	Male	3.13	.91740	1.480	.140	None	–
	Female	2.97	.95686				
Investment in social capital	Male	2.69	1.00857	-.470	.639	None	–
	Female	2.74	1.00357				

Age

Appendix 21 reveals the results of one-way ANOVA among three age groups for the four factors of the construct of career self-management. Significant statistical differences at the $p < .05$ level existed in all factors apart from boundary management between work and non-work life. However, actual differences among these age groups were small to moderate, as the eta squares were .038 for career exploration, .082 for investment in human capital, and .087 for investment in social capital. Moreover, the

Tukey HSD test indicated that these statistically differences existed only between the 20-25 years old group and >30 years old group.

Ethnicity

Appendix 22 reveals the results of one-way ANOVA in the construct of career adaptability among five different ethnicity groups. Significant differences were found at the $p < .05$ level in factors of career exploration and investment in human capital ($p = .010$ & $.005$ respectively). Moreover, these significant differences existed only between NZ Europe and Asian, and ethnicity recorded a moderate effect size in the difference (eta square = $.040$).

Highest Qualification

Appendix 23 demonstrated the results of one-way ANOVA in the construct of career adaptability among groups divided by participants' highest qualification gained. No significant difference at the $p < .05$ level was found. Thus, whether participants were postgraduate qualification holders or graduate qualification holders did not significantly influence their career self-management behaviors.

College of Graduation

Appendix 24 shows results of one-way ANOVA in the construct of career adaptability among groups divided by colleges that participants graduated from. No significant difference at the $p < .05$ level caused was found. Therefore, colleges that participants graduated from did not make any significant difference in their career self-management behaviors.

Main Residence after Graduation

Appendix 25 displays results of one-way ANOVA in the construct of career adaptability among six groups divided by the main resident places of graduates. The only significant difference at the $p < .05$ level existed in the factor of investment in one's social capital ($p = .025$). However, Tukey HSD test indicated that this significant

difference was between the mean scores of the group of people who ignored relevant questions in the online survey and the group of people who gave “other” as the answer. Therefore, this significant difference was ignored for this study. As no other significant difference was found in the three other factors, it was assumed main resident places after graduation did not affect participants’ career self-management behaviors.

A summary of the above group comparison, which could partially answer the three research questions of this study, is provided in the section below.

5.2.7 Summary of Frequency Analysis Results and Group Comparison Results – Addressing the Research Questions

Following the above frequency and group comparison analysis, a summary of results is reported in two tables below. Table 15 gives answers to the first part of research questions: to what extent recent tertiary graduates held protean and boundaryless career attitude, adaptable to their career contexts, and self-managed their careers. Table 16 supplies answers to the second part of research questions: whether demographic elements made any significant difference in the levels of their career attitudes, career adaptability and implementation of career self-management behaviors. The next chapter will focus on the discussion about main findings, as well as the comparison between them and previous literature.

Table 15: Summary of participants' level of new career attitudes (Protean and boundaryless attitudes), career adaptability and implementation of self-management behaviors

Construct	Factor	Graduates' level of endorsement
Career Attitudes	Protean self-directed	To a great extent
	Protean value-driven	To some extent
	Boundaryless mindset	To a considerable extent
	Organizational mobility	To a considerable extent
Career Adaptability	Career planning	To a considerable extent
	Career decision-making	To a considerable extent
	Career resilience	To a considerable extent
	Adaptability to changes	To a great extent
Career Self-management behaviors	Career exploration	To some extent
	Boundary management	To some extent
	Investment in one's human capital	To some extent
	Investment in one's social capital	To a limited extent

Table 16: Summary of results of group comparisons in whether demographic variables could influence participants' career attitudes, career adaptability and career self-management behaviors

Construct	Factors	Demographic variables that might cause significant difference (SD) between groups					
		Gender	Age	Ethnicity	Qualification	College	Location
Career Attitude	Protean self-directed	-	-	-	-	-	-
	Protean value-driven	-	SD (small effect)	-	-	-	-
	Boundaryless mindset	-	-	-	-	-	SD (small effect)
	Organizational mobility	-	-	SD (small effect)	-	-	-
Career Adaptability	Career planning	-	-	-	-	-	-
	Career decision-making	-	SD (small effect)	-	-	-	SD (small effect)
	Career resilience	SD (small effect)	-	-	-	-	-
	Adaptability to changes	SD (small effect)	-	-	-	-	-
Career self-management behaviors	Career exploration	-	SD (small effect)	SD (moderate effect)	-	-	-
	Boundary management	-	-	-	-	-	-
	Investment in human capital	-	SD (moderate effect)	-	-	-	-
	Investment in social capital	-	SD (moderate effect)	-	-	-	-

Chapter 6 – Discussion

The purpose of this study is to explore three areas – career attitudes, career adaptability and career self-management – that recent tertiary graduates could continue working on to build a continuous career development in the fragmented New Zealand employment context. Three research questions have been designed accordingly, including the extent to which recent tertiary graduates hold new career attitudes (protean and boundaryless career attitudes), possess career adaptability, and self-manage their own careers, together with reference to participants' demographic elements such as gender, age range and ethnicity. This chapter will mainly discuss the findings in Chapter 5, and compare these findings with established literature. Potential areas for future research will also be briefly identified along with the main body of discussion, finishing with a concise discussion of the limitations of the present research.

6.1 Recent Tertiary Graduates' Career Attitudes

6.1.1 To What Extent Graduates Hold New Career Attitudes

The findings indicated the 337 Massey participants who graduated in 2008 from Palmerston North campus hold protean self-directed attitudes to a significant extent, which reflects that, in general, they much prefer taking an independent and responsible role in proactively managing their careers rather than abandoning future career progress to their organizations, or simply fortune. Figures 11-14 in Chapter 4 and Appendix 9 present all evidence for this explanation. They clearly displays the mean scores of participants' orientation in taking charge of their career, since being independent in career development, taking responsibility for their career success and being their own person in the process of development, are all showed to be above 4 points on the five-point Likert-scale. When considering the self-directed factor as a whole, the mode of the average mean score for this factor is 5.00. These findings are congruent with that of

Sargent and Domberger's (2007) that a protean person takes a high responsibility for self-directed career management.

Compared to the high level of their protean self-directed attitude, participants' level of protean value-driven attitude is slightly lower, though not by a too significant amount. For instance, with a mean score 3.32 of the factor on the same scale, participants disclose a value-driven intention towards not borrowing external standards to judge their values, nor letting others influence their decisions, although such an intention is not critical in terms of their scores. In particular, mean scores ranging between 2.88 to 3.84 in this value-driven factor (Appendix 9) illustrate that participants have achieved some personal value congruence by guiding their decisions with their own values rather than company values, and such values are more internally developed than externally affected. This supported with Sargent and Domberger's (2007) view that protean oriented people make judgements about their career and discern the current employment norms. However, the reason why participants' are generally less value-driven than self-directed might be that it takes a considerable time to form values, and one's most important personal values take form as they mature (Sargent & Domberger, 2007).

Such findings provide evidence for the increasingly accepted opinion in career studies that boundaryless career attitudes are part of a trend in today's complex and frequently changing employment environment. For example, the results in Chapter 5 have demonstrated that participants' endorsement of boundaryless mindset and organizational mobility preference are both confirmed to be supported, with 3.94 and 3.50 respectively as mean scores for each factor (Appendix 9). Within the boundaryless mindset factor, mean scores for five items were between 3.81 and 4.23, which reflects participants' proactive attitude on challenging new work assignments, working with people outside their current department or organization, and enjoying projects across departments or even organizations. Moreover, in the organizational mobility factor, mean scores for all four items are between 2.20 to 2.70, which indicate good support considering all these items are negatively worded. This result reveals that participants would not feel disadvantaged if they were not able to work for only one organization, and they might possibly choose to move between employers proactively. These findings strongly support established literature that a boundaryless career is the opposite to the stereotype of a traditional organizational career, in terms of career actors'

openness to their environment, fearlessness of structural constraints in their future, and proactive boundary transcending activities, especially between employers (M. Arthur & Rousseau, 1996).

When considering about the career attitudes construct as a whole, although sample graduates largely scored above the average in each factor in this study for their career attitude, the results from the analysis imply that a number of them still possess strong traditional organisation career orientations. This supports the protean and boundaryless career attitude scale designers' proposition that one's career orientation or attitude cannot be defined as extremely traditional or extremely modern, but only as a combination of both; and such different orientations or attitudes sometimes overlap with each other (Briscoe, et al., 2006). People can be lower or higher, stronger or weaker, in terms of their value-driven, self-directed, boundaryless mindset and organisational mobility, and this constructs the basic profile of a protean and boundaryless career actor. Although these four dimensions cannot include all aspects that new career attitude might contain, this four-dimensional construct has provided an effective measure of career attitudes to some degree (Briscoe & Hall, 2006b).

Interestingly, findings of the present study illustrate that levels of sample graduates' protean and boundaryless career attitudes are so high, and this is almost contrary to the established literature that traditional organizational career orientation is still the leading one within the contemporary employment context. For example, King (2003) has concluded that graduates' traditional organization career orientation continues to dominate in the workplace, while graduates' endorsement of new career attitudes appears limited. Similarly, Sturge et al.'s (2000) stated that graduates employed in large organizations reported more frequent expectations of organisations for their career development, than graduates relying on themselves to manage their careers. However, among this study's sample graduates, traditional career attitudes continue, but frequency distribution figures from the results clearly highlight that new career attitudes have been a dominating preference of recent graduates.

This dramatic difference between the findings and those of existing literature arguably can be explained by participants' new employment contexts. The aforementioned two studies were both conducted among UK graduates, and their employment context

differs markedly from New Zealand's economic environment. As put forward by Hall (2004) in his career path research conducted in New Zealand, workers in a rapidly transformed economy like New Zealand possessed more protean oriented career attitudes than those in a country with a more traditional organizational environment context, like France. Furthermore, Sturge et al.'s study (2000) was mainly conducted in large UK organizations, where the possibility for graduates to be provided with traditional organizational career development services and opportunities would be greater than in small or medium sized organizations where many of our participants are very likely to work.

6.1.2 Demographic Variables and Graduates' Career Attitudes

Gender appears not to affect recent tertiary graduates' levels of endorsement of the new career attitude, which is contrary to some established literature. The data analysis results strongly demonstrate that the gender variable does not show any significant difference in the 337 participants' mean scores of any factor in the career attitude construct. This finding is congruent with Hall's (2004) research, but against some other research such as Eby, Butts and Lockwood (2003). They found that women intended to be more non-traditional career owners, while males possess more physical mobility (Eby, et al., 2003). Similarly, Sullivan and Arthurs (2006) claimed that women may have higher levels of psychological freedom to cross boundaries subjectively. In our study, however, although gender does not make any significant difference, male participants do achieve slightly more than females in terms of their scores in all factors except organisational mobility. This interesting difference between the findings and the established literature might be due to New Zealand's arguable culture of gender equality, and the fact that the number of females enrolled has overtaken that of males in a number of New Zealand universities. This largely empowers females and decreases the earlier difference in male and female endorsement of new career attitudes.

Age affects participant's protean value-driven attitude, but does not influence any other of the three factors (self-directed, boundaryless mindset and organisational mobility) in the career attitude construct. This finding supports Segers, Inceoglu, Bartram and

Henderickx' (2008) conclusion that age positively relates to the value-driven dimension of a protean career. They explained that age might affect one's career attitude because young people are more adaptable to changes in employment context, so they can adjust their expectations on their employment contract which is psychologically and socially based rather than job security based. However, the findings show that participants in the >30 years group reach the highest mean score in the value-driven factor among all three age groups (20-24 yrs, 25-29 yrs & >30 yrs). This result implies that mature students over 30 years could be more concerned about the congruence of their personal values and their career choices. Moreover, in the present study, age band has little effect on participants' different levels of endorsement of career attitude. This implies that when exploring the age influence on career attitudes, it might be an issue but it is evidently not crucial.

Participants' ethnicity has a small effect on their orientation to organisational mobility, but has no significant effect on any of the other three factors (protean value-driven, self-directed, and boundaryless mindset) in this career attitude construct. Appendix 12 demonstrated that among the four major ethnicity groups in this study (NZ Euro, NZ Maori, Pacific Island people and Asian people), significant difference in the mean scores of the organisational mobility exists only between NZ European people and Asian people, with NZ European people scoring higher. It is congruent to the findings of Sullivan and Arthur (2006) that individuals originally from a high individualism culture are more prone to a higher physical mobility, which could be motivated by evidence of career success, than those originally from a high collectivism culture.

Our findings reveal that no matter whether a graduate holds a postgraduate or a graduate qualification, or they graduated from Massey College of Business or the non-business colleges, their levels of endorsement of protean and boundaryless career attitude are similar. This is inconsistent with other research where business students (e.g. MBA graduates) or management training participants had higher protean career orientation, or were more intent on developing their own careers than graduates of other majors (Hall & Associates, 1996; Hall & Moss, 1998). This inconsistency could derive from the sample difference between Hall's two studies and the current study. For example, Hall's studies were conducted among managers or MBA graduates who had had several years working experience before they commenced their MBAs; therefore the data led

the assumption that several years' work experience and a few trial and error phases are helpful and cause people to differ in terms of their protean and boundaryless career attitudes. However, over one-third of the 337 participants were graduates who had officially joined the business world for no more than one year by the time of this current online-survey; consequently, their limited work experience would be very similar to each other, with similar opportunities for motivation to be more protean or boundaryless career oriented. This opens the way for further investigation of such inconsistencies between studies in this interesting area.

The last demographic variable explored is the graduates' main residences after graduation. Findings demonstrate that among five groups (large NZ cities, small/medium NZ cities, NZ towns & rural areas, large cities overseas and other places), significant difference only exists between residents of small/medium NZ cities and residents of large NZ cities in terms of their boundaryless mindset, with large NZ city residents scoring higher on average (4.03 versus 3.79). This implies that a more complex employment environment, such as that found in larger cities, might provide individuals with more motivation and opportunities to become protean and boundaryless oriented. Further study is required before the reasons for this can be fully established.

6.2 Recent Tertiary Graduates' Career Adaptability

6.2.1 To What Extent Graduates Endorse Career Adaptability

Four facets of the career adaptability construct proposed by Savickas (2005) and Hall (2004) are examined: career planning, decision making, career resilience and adaptability to changes. Findings reveal that recent tertiary graduates sampled generally have endorsed career adaptability to at least a considerable extent, which provides empirical evidence for Savickas' (2005) career adaptability model that the construct can be effectively represented by the above-mentioned four factors, and then measured by

Likert-scales to locate individual levels or rates of graduates' endorsement of these dimensions.

Findings indicate that recent tertiary graduates are concerned about their career plans to a considerable extent, which confirms the established literature that career planning is relevant to an individual's future career orientation. Appendix 9 displays the mean scores of 337 participants for all items within each of the four factors of the career adaptability construct. It confirms that participants are concerned with their future career plans, enjoying the process of planning and meditating on their near future, while creating a career plan for themselves. Career planning is not as long term as it used to be under the career maturity construct, and it has become more flexible to changes in each person's career context. However, they largely score lower in the item "I am extremely career minded" compared with other items, possibly due to the ambiguity in the meaning that this item might convey to them.

Regarding the career decision making factor, the results suggest that career indecision is not a prevalent problem among the participants. Upon analysing Figure 16 in Chapter 5 and Appendices 9 - 10, the mean scores of the four negatively worded items in the career decision making factor are 2.42, 2.68, 2.55 and 2.54, respectively, and the mean score of the total factor after calculating the reversed results is 3.43. This reveals that, in general, the participants do not feel confused about their decision making process, and most do not have the problem of serious uncertainty or indecisiveness about their career interests or career paths. Participants' considerable level of career decision making does not concur with findings in some previous literature that career indecision is prevalent among college students and young people in transition (Vianen, et al., 2009). It would be valuable to investigate further the reasons for this reversal.

It is interesting that graduates' career planning and decision making levels are similar, rather than negatively related as proposed by other researchers. Creed, Patton and Prideaux (2007) claimed that the lower decision making level of graduates would result in a higher career planning level, as indecisiveness had become a motivation for more career planning effort. However, findings showed that graduates could display a considerably high career planning level, with a similar high level of career decision making. This could be partially explained by Savickas' (1997) career adaptability

model, that when decision making and planning are both included in the integrative construct of career adaptability, both can be taken into consideration and practiced simultaneously by career actors with sufficient motivation.

In respect of the other two factors of career adaptability construct, results also reveal that graduates' career resilience and their adaptability to changes have both reached a relatively high status; this demonstrates that graduates are well able to rebound from setbacks and happenings in their career paths, and adjust themselves to the changing environment with an active attitude and self-esteem. For example, Appendix 9 recorded a mode of 4.00, with the mean score of participants' adaptability to changes reaching 3.98, and this indicates a considerable level of capability to deal with changes. These findings disprove Vianen, Pater and Preenen's (2009) conclusion that contemporary college graduates do not have enough readiness or skills to cope with the changing environment. This may be partially explained by sample differences, since Vianen *et al.*'s sample composed of young graduates having little life and working experience and having significantly not improved their resilience and adaptability through experiencing and practice in the workplaces, while over one third of the participants of this study are mature students over 30 years old, who have learnt much from their experiences.

Finally, all the above findings support established literature that while the traditional career maturity concept about individuals' career development has not been completely abandoned, the concept of career adaptability is increasingly endorsed (Savickas, 2005; Savickas, et al., 2009) For example, findings show that the mean scores of the factors of career resilience and adaptability to changes are slightly higher than that of career planning and decision making, which supports Savickas' proposition (1997) that career adaptability, represented by an individual's career resilience and ability to cope, should be more emphasised by contemporary career actors than career maturity (such as planning and decision making) in the process of continuously developing a satisfactory career.

6.2.2 Demographic Variables and Graduates' Career Adaptability

Gender does not cause any statistical significant difference in the mean scores of participants' career planning and decision making, but it records significant differences on the mean scores of participants' career resilience and their adaptability to changes. Although no significant difference has been found between male and female participants, females score slightly higher than males in career planning, which is consistent with earlier findings that females are more intuitive and make purposeful plans for their career (Buddeberg-Fischer, et al., 2003; Kelly & Cobb, 1991). In comparison, although no significant difference is found between males and females in the mean scores of career decision making, males score slightly higher than females in career decision-making, which could be explained by gender differences in locus of control, intuitive and emotional traits, and decision-making self-efficacy (Bubany, et al., 2008). However, statistically significant difference in the mean scores of career resilience and adaptability to changes is found between male and female groups, with males obtaining higher mean scores than females in both factors, with the gender variable having a small effect on such significant difference. Due to the lack of empirical studies in the measurement of graduates' career resilience and adaptability, there were no qualified reasons to explain this finding here, and it is an interesting area for future research.

The variable of participants' age ranges does not indicate any statistically significant difference in any factor other than career decision making in the construct of career adaptability. Results in Appendix 11 indicate that such significant difference mainly exists between the 25-30 years age group and the >30 age group, with age registering only as a minor effect in causing this significant difference. Participants in the >30 age groups score 3.53 as average, higher than the average score (3.19) of participants in the 25-30 group. This suggests that older people are more mature than younger people in terms of career decision making, which is consistent with the traditional career maturity theory. Also, this aligns with an earlier research finding that older adults are more positive with their decisions than younger adults (Kim, et al., 2008). More empirical

studies are needed to explore why age does not cause significant difference in graduates' career planning, career resilience and adaptability to changes.

Participants' main residence after graduation is the last variable that causes significant statistical difference in the career adaptability construct, more precisely, in the career decision making factor. Appendix 15 indicates that graduates residence in small/medium size NZ cities after graduation scores much lower than those living in NZ towns and rural areas on average, with a mean score of 3.37 for the former and 3.86 for the latter. However, as the residence variable only mildly affects the significant difference, the reason why it causes significant difference in career decision making between such two groups of participants is quite evasive, but cannot exclude statistical randomness in the present study.

Furthermore, no significant difference is found in different ethnicity groups in any of the four factors in this career adaptability construct, nor in groups divided by the highest qualifications gained when graduating, or the colleges from where participants graduated. Future research would contribute more empirical studies in these fields, so that results could be better compared and explained.

6.3 Recent Graduates' Career Self-management Behaviours

6.3.1 To What Extent Recent Tertiary Graduates Implement Career Self-management

This study explores four types of career self-management behaviours initiated by recent tertiary graduates: career exploration behaviours, work and non-work boundary management behaviours, and their investment in human and social capital. Results revealed in Chapter 5 show that the 337 sample graduates have launched career self-management to some extent, with the mean scores for each of the above factors being 3.08, 3.20, 3.03 and 2.72. These results suggest that graduates have significantly

implemented their belief that they should take major responsibility to develop their careers, while, meanwhile, it still confirms their belief in the traditional bureaucratic view of careers, namely, that organisations should supply assist them to develop individual careers.

In respect of the two aspects of career exploration, environment exploration and self exploration, findings reveal that sample graduates tend to pay slightly more attention to self exploration than to environment exploration. This is confirmed by Appendix 9, with participants' mean scores of self exploration items (CSMexp1-4) being slightly over mean scores of environment exploration items (CSMexp5-7). As claimed by Werbel (2000), self-exploration of people's personal aspects, such as interests, values, needs and skills, are related to their capability to fit into different work environments, while environment exploration is about possible career opportunities addressing the goal directions in one's career path. Although the present study has not investigated what relationships may exist between self-exploration and environment exploration, it reveals graduates' emphasis on self, rather than on their environment, when considering continuous career development, and it implies that they might have gathered more information about their current work environment or specific employment opportunities.

This study concurs with established literature that boundary management between work and non-work has become a priority in young people's career self-management (King, 2003), which is highlighted in participants' dislike of working outside normal hours. Appendix 10 shows that participants' mean score of boundary management is 3.20 out of 5.00, which suggests they have reached a considerable level in managing their work and non-work life. Furthermore, Appendix 9 displays mean scores of all items (negatively worded) in this factor, and these results imply that although our sample participants would like to keep separate their personal and work life, if necessary, they can adapt their social life to align with their colleagues to some extent, although generally they are less likely to work outside normal hours. Moreover, findings have not provided confirmation of Sturges' (2008) proposition that in an individual's early career stage, young people place emphasis on long term career development, a situation which may require some compromise in their personal life, such as working overtime, rather than keeping a balanced work and personal life.

Regarding the factor of investment in personal human capital, described as the sum of investment in one's own education and experience, the findings suggest that sample graduates have made some effort to develop their skills, acquire training and obtain broadly based experience for their future careers. For example, Appendix 9 provides mean scores for each item of this factor. It indicates participants place most effort on skills development in the current workplace to a considerable extent, followed by efforts on skills preparation for future careers, obtaining training opportunities beyond current companies, and accumulating broadly based experience across departments or positions. It is noteworthy that their mean score of gaining broadly based experience is the lowest among the mean scores of all the four items, which may be possibly explained by their recent entrance into the workplace, since over one third of them are young graduates who have been in the workplace for less than a year.

Compared to their investment in human capital, participants also revealed their effort in investing in their social capital, but only to a limited extent, and their investment in bonding close connections is greater than their investment in establishing loose connections. To illustrate, the mean score of this factor is only 2.72 out of 5.00, with mean scores for each item in this factor as 2.86, 2.76, 2.34 and 2.92. This indicates that among the four aspects of social capital mentioned in our survey questionnaire, sample participants are most likely to discuss their career problems with people close to them, such as family, friends, or important others; they are less likely to create opportunities to be noticed or known by those who could influence their careers as well as to establish connections with people in their interested work areas; and least likely to ask people for career advice, except when others offer advice to them. These findings confirm that sample graduates prefer investing effort in bonding close connections (strong ties) with friends and family members when considering their career related issues, than in investing efforts in building loose connections (weak ties) with individuals who may provide opportunities or useful information about their careers. Future empirical studies may investigate these aspects in more depth.

Moreover, the findings demonstrate that the level of participants' endorsement of protean and boundaryless career attitudes is generally higher than their level of self-managing their own careers. In other words, graduates have not put significant effort in

their career self-management whilst considering their relatively high level of endorsement of new career attitudes. This gap between their identified career attitude and career self-management behaviours indicates graduates may need some external guide or support to manage their own careers more effectively in a range of areas. However, this gap does not indicate that graduates only take little notice of the new career ideas as suggested by King, Burke and Pemberton (2005), because there may well be complex reasons and this study cannot provide significant analysis. One possible reason may be that recent graduates have accepted new career attitudes to a considerable extent, but mostly tend to perform according to their habits which have been nurtured in a traditional organisational working context (Hartung, Porfeli & Vondracek 2008). Also, the wide variety of sample participants' employment conditions makes it difficult to find definitive explanations in this regard. Future research might be usefully directed to this area within a New Zealand employment environment.

6.3.2 Demographic Variables and Graduates' Career Self-management

This study confirms previous research findings that gender does not reveal any statistical significant difference towards participants' career self-management behaviours (J Sturges, 2008), but there remain several other points of interest. First, although there are few clear differences between male and female groups in participants' mean scores of each factor of career self-management construct, it is interesting to note that the mean score of females is only slightly higher than that of males for the boundary management factor, whereas, in established research literature, females often score much higher than males in balancing work and life. This may be partially caused by the large number of young female graduates who are under 30 years old and had not been married at the time of participating in the study. Eventually, more graduates marry and establish their own families and have child care responsibilities, so the management between work and life boundaries may become increasingly to be more of a priority for female graduates than males, as is indicated by earlier research findings (Sturges, 2008). Second, males in the sample score slightly higher than females in investing in human capital, which is in agreement with previous research that there is a

division in the allocation of time and investment in human capital between married males and married females, with males placing more emphasis on the accumulation of human capital (Becker, 1985). Nevertheless, a limitation in the present study exists in that the sample reveals over one third of the participants are young and might not presently shoulder any family and childcare responsibilities. Third, female graduates score slightly higher than males in investment in social capital, which confirms established literature that women are more likely than men to draw upon social capital as a resource during their career (Lowndes, 2004).

The findings confirm that age ranges impact on participants' career self-management behaviours in all factors except boundary management. Generally, a statistical significant difference exists only between two age groups: the 20-24 yrs group and the >30 age group, with the former scoring higher (Appendix 20). This indicates that graduates aged between 20-24 years old have engaged more in career self-management behaviours than the >30 age graduates, with regard to their career self and environment exploration, and investment in their human and social capital. This could partially be explained by Sturges' (2008) proposition, that during an early career stage, individuals wish to establish their careers when career related issues are their priority. Also, it could be partially explained by the economic and social contexts of the >30 years old participants, where traditional organisational careers were arguably the dominating career path which facilitated their career development view of relying on organisational career support. With regard to boundary management, however, the 25-30 years group scores the highest. The reason for this may partially lie with the sample participants' special life stage, since 25-30 years graduates encompass the period when the issue of a balanced career and family commences for them, whilst most of the 20-24 years graduates only need to focus on their careers, and the >30 years graduates are more likely to have both their career and personal life settled.

Ethnicity is a statistically significant difference in participants' career exploration, but it does not affect the other three factors of the career self-management behaviour construct. A significant difference in the career exploration factor exists only between the NZ European group and the Asian group, with the former scoring lower than the latter (2.98 versus 3.37). This may be through a number of reasons. For example, with environment exploration, as a minority group in New Zealand Asian graduates may

have to seek for more information about employment opportunities to move into a career than their NZ European counterparts. Moreover, in Asian culture, exploration of self is an important practice throughout a person's whole life, whether employed or not. Other reasons for the significant difference between NZ European and Asian graduates are worth further investigation, as ethnicity has a moderate effect on the significant difference between these two groups.

Finally, the findings indicate that the participants' qualification gained does not cause any significant difference in their career self-management behaviours; neither does the college from which they graduated, nor their main residence after graduation. Further empirical research could explore further the reasons for these findings, and to provide evidence to see if these findings are generalisable to the broader population in New Zealand beyond the university.

6.4 Limitations

This study provides useful data about New Zealand tertiary graduates' career attitude, career adaptability and career self-management behaviours, and explores their levels of endorsement of such aspects in continuous career development, along with a number of demographic variables. However, given the lack of previous empirical studies in this area, limitations of the present study relate to the type and size of the sample, the design of the study and the methodology. There follows a discussion of these limitations.

Firstly, although a significant number of recent tertiary graduates have been contacted with a fairly optimistic response rate, there lies a potential problem in generalising our findings in a wider New Zealand context, because our sample participants are all graduates from Massey University Palmerston North campus. It is not known if graduates from other New Zealand universities will offer similar results based on the same survey; it is possible that the Auckland and Wellington campuses might provide markedly different results to Palmerston North campus graduates.

Secondly, due to Massey University's strength in distant education, over half of the participants in our sample are mature students over 30 years of age. The significantly

large number of mature graduates' data may greatly influence the findings, so that generalisation beyond Massey University becomes challenging.

A third limitation relates to the design of the study. Due to the lack of cross-sectional empirical studies in individual career management, this study is mainly exploratory, and questions appearing in the online survey were developed from several previous studies in related academic fields, such as organisational behaviour, organisational psychology and sociology. As a result, the different backgrounds of those previous studies constrain the consistency of the online questionnaire. Although factor analysis and reliability tests have demonstrated that this questionnaire is valid and reliable, measurements still need to be tested further among a wider audience of tertiary graduates beyond Massey University.

Moreover, some flaws in question design were identified only after data had been collected. For example, although five major ethnicity groups are listed in the questionnaire for participants to choose, about 20% of participants chose "Other ethnicity" or "Declined to answer the question", which shows some ethnicity groups might be absent from the present study and accuracy of data is threatened. Third, important information that might affect individuals' career attitudes, career adaptability and career self-management behaviour was not collected through this survey, such as the types of industries, and the size of organisations which employ them. If such information is forthcoming, it may be useful to explore additional variances in the above three constructs between other major groups of graduates.

A further limitation lies within the methodology of the present study. Due to the limit of time for a Master's thesis, an in-depth longitudinal study cannot be implemented. If a follow-up study was to be conducted in two, or even three years', time, it would be interesting to explore how graduates' career attitudes, career adaptability and career self-management behaviours change, as their work experience increases. In addition, although an online survey is advantageous in reaching a population that is scattered in locations, it has disadvantages when compared with the traditional mail survey method. For example, most responses were collected within the first three days after the email invitation or reminder was sent; subsequently, responses decreased dramatically. Also, it is inevitable that a number of email invitations were picked up or disposed of by

participants' own email security system, and this may have become a negative influence in the total response rate.

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Chapter 7 – Conclusion

This study has fulfilled the research purpose by responding to the three research questions: to what extent recent tertiary NZ graduates hold the new career attitudes (protean and boundaryless career attitudes), endorse career adaptability, and implement career self-management behaviours, influenced by their gender, age, ethnicity, qualification, college from which they graduated and location after graduation. In this final chapter, the main findings of the study are summarised with supporting points, and issues for future research are highlighted. Finally, this chapter considers how the findings could affect current views on individual tertiary graduates' career development, and the practical importance of such findings when placed in the larger world-wide employment context.

7.1 Recent Tertiary Graduates' Career Attitudes

7.1.1 To What Extent Graduates Hold New Career Attitudes

New career attitudes (protean and boundaryless career attitudes) are more prevalent than expected among recent Massey University graduates. Generally, participants hold protean self-directed career attitudes to a high level, and are value-driven to some degree when considering career related issues. Their boundaryless career attitudes are held to a significant extent, indicating that they endorse mobility across organisations and hold a boundaryless mindset in terms of career planning and career related decision making. Although agreeing with Hall's (2004) findings that new career attitudes and traditional organisational career attitudes coexist among career pursuers in a transforming economic context (like NZ), these clearly demonstrate that the new protean and boundaryless career attitudes are gaining visible popularity among graduates when compared with the traditional organisational career attitudes. Hence, these findings provide strong support to established career literature that, with an acceptance of a variety of career paths, graduates mostly tend to be the navigators of

their own career paths, and their endorsement on new career attitudes is increasing (Arthur & Rousseau, 1996; Briscoe, et al., 2006; Hall, 2004).

7.1.2 *Demographic Variables and Graduates' Career Attitudes*

Gender does not create any significant difference in recent tertiary graduates' endorsement of protean or boundaryless career attitudes. However, within the study, male graduates scored slightly higher than females in the factor of organisational mobility, and this provides evidence supporting Sullivan and Arthur's (2006) research that males possess more objective mobility than females.

Age ranges would slightly influence these graduates' career attitudes, but a small significant difference was found only in the value-driven factor, with the >30 years group scoring the highest among the three age groups. This result supports Seger *et al's* (2008) finding that age positively relates to an individual's protean value-driven attitude, and implies that mature students over 30 years of age may be more concerned than others about the congruence of their personal values and their career choices.

Ethnicity may also have a small influence in participants' career attitudes, but its effect lies only in the factor of organisational mobility. With New Zealand Europeans scoring the highest among the five ethnicity groups in this study, the present study confirms previous research that individuals from an individualism culture background are more prone to be physically mobile when crossing career boundaries than those from a collectivism cultural background (Segers, et al., 2008).

Graduates' qualification, college and location do not affect their career attitudes, but graduates who live in large New Zealand cities appear to be more protean and boundaryless career oriented than those in small/medium NZ cities.

7.2 Recent Tertiary Graduates' Career Adaptability

7.2.1 To What Extent Graduates Embody Career Adaptability

Recent tertiary graduates in the present study embody career adaptability to a significant level, in terms of the four factors under Savickas' (2009) career adaptability construct: career planning, career decision making, career resilience and adaptability to changes. There are a few points that are complementary to the established career literature.

First, the relatively high level of graduates' career planning indicates their enthusiasm for a continuous career development. However, although they still intend to plan career futures in advance, such plans would be more short-term oriented, and remain flexible to change. Second, career indecisiveness or uncertainty is far from being a significant problem among recent tertiary graduates, as has been assumed by some researchers (Bubany, et al., 2008). Rather, most graduates are clear about their career interests and the process of making such career decisions, with any career indecisiveness occurring when confronting changes, but only to a limited level. Third, conflicting with some established literature that individuals' career decision making would be negatively related to their career planning (Creed, Patton, & Prideaux, 2007), graduates' levels of career planning and decision making are both high. The reasons to explain this could be multiple, hence they are worthy of being explored later in future empirical career studies.

Finally, introduced by Savickas (1997) as two new dimensions of the career adaptability construct, career resilience and adaptability to changes have attracted much attention among recent tertiary graduates. This confirms that in the contemporary career context, Savickas' (1997) career adaptability concept has surpassed Super's (1984) career maturity concept in its suitability to individual's career development (Savickas 2005; 2009). However, this study provided opposing evidence to some established literature that contemporary college graduates do not possess enough career resilience due to lack of work and life experience (Vianen, et al., 2009), since graduates' level of career resilience in this study was high. Although the high proportion of mature students in

our sample may partially explain this, there could be a number of other reasons worthy of being explored.

7.2.2 Demographic Variables and Graduates' Career Adaptability

Gender, generally, does not make any significant difference to participants' career planning and decision making. However, regarding factors of career resilience and adaptability to changes, gender has a small influence, with males scoring higher than females. This is inconsistent with the established literature that females are more intuitive to prepare career plans than males (Buddeberg-Fischer, et al., 2003; Kelly & Cobb, 1991), and more empirical studies covering broader contexts would be valuable to find further evidence to support the above findings.

Graduates' main resident places after graduation can influence their career decision making, but the other demographic variables - age, ethnicity, and colleges from which they graduated - do not confirm any such influence in their endorsement of career adaptability. The reasons are not clear at this stage; hence they are worthy of further attention in the future.

7.3 Recent Tertiary Graduates' Career Self-management Behaviours

7.3.1 To What Extent Recent Graduates Implement Career Self-management Behaviors

Recent tertiary graduates implement career self-management behaviors to a limited extent, in terms of career exploration, boundary management between work and non-work, and investment in human and social capital. However, compared to their high level of the endorsement of new career attitudes (protean and boundaryless attitudes), their levels of implementation of career self-management behaviors seem to be

relatively low. Investigating reasons for such an inconsistency between attitude and action could be a direction for future empirical career research, particularly in different employment contexts.

Moreover, there are a number of new interesting findings regarding the above four factors of the career self-management construct. First, graduates intend to focus on their career self-exploration more than their career environment exploration. This study revealed that recent tertiary graduates had not spent as much time and energy on gathering information about their career opportunities as they had to inform themselves regarding their own career interests, values and capabilities. Second, boundary management between work and non-work life is gaining increased significance among graduates; but whenever a compromise has to be made, they would prefer to adapt their social life to fit in with their colleagues rather than overworking. Third, in regard to investment in human capital, graduates tend to expend most effort on their skill development in their current workplaces, and less in accumulating broadly based experiences in different workplaces. Fourth, it is noticeable that according to data collected, graduates invest in their social capital only to a limited extent, with lowest mean scores obtained for this factor among all the four factors in the construct of career self-management behaviors. Specifically, they are more interested in bonding close connections with family members and close friends than in building such connections with people who could bring them career opportunities. As such, more empirical studies in different career contexts would inform these findings, and whether they are only applicable to this particular sample of participants.

7.3.2 Demographic Variables and Graduates' Career Self-management Behaviors

Gender still does not make any statistical significant difference in graduates' career self-management behaviours, which conforms with Sturge's (2008) findings. Age has a slight effect upon career self-management behaviours in the factors of career exploration and investment in human and social capital, but only in influencing the 20-24 years and the >30 years groups. Ethnicity causes a moderate influence in the career

exploration of Asian and New Zealand European graduates. Other demographic variables - graduates' qualification gained when graduated, colleges from which they graduated, and their main resident locations after graduation - have no influence upon their career self-management behaviours.

7.4 Practical Implications

The purpose of this study is to offer new insights into the ways that recent tertiary graduates can maintain a continuous career development in a fragmented employment context. It is argued that adopting new career attitudes (protean and boundaryless career attitudes), increasing career adaptability and implementing career self-management behaviours are three major strategies to achieve this, along with consideration of each individual graduate's demographic elements. According to these findings, there are several practical applications for both individual graduates and institutions.

For individual graduates, continuous learning about new career attitudes and career adaptability should never be neglected at any career stage. Mastering a broader understanding about such career attitudes and adaptability will be of great importance in their future career development, no matter in whatever career contexts they are involved, or what unexpected career transitions they might experience. As stated by Hall (2004), mastering new career attitudes, especially the ability to change according to environments, is one of the two modern "meta-competencies", with learning ability being the other.

However, based upon the findings, it seems that presently, it is more necessary for these recent graduates to improve their level of career self-management behaviours, rather than to increase their acceptance of new career attitudes and the concept of career adaptability. Although it is argued that implementing career self-management behaviours does not directly lead to successful career outcomes (King, 2004), allowing for huge differences between their level of new career attitudes and the level of career self-management implementation, it is clear that these graduates should practise more effectively on managing their own careers, rather than only considering career self-

management to be of importance. Among a wide variety of areas they might develop to improve their career self-management, the findings suggest that they should expend more effort on accumulating broadly based skills and experiences, both within and beyond their current workplaces, investing more time and energy in their social capital (especially in building networks with people who could influence their careers), and spend more time seriously thinking about how they could manage their personal and work life more effectively in the long term.

For institutions, practical applications exist for companies that employ these graduates, and educational or career counselling institutions that offer them career services. Organisations that employ recent tertiary graduates should be fully aware that, although these employees still seek traditional organisational careers, their significant level of new career attitudes and career adaptability might suggest that organisations offer more autonomy and opportunities for them to develop their own careers. Hence, in order to retain young talented brains, facilitating their personalised career self-management would be more useful to them as individuals than providing a similar career development plan to all.

Educational and career counselling institutions should integrate the concepts of career attitudes and career adaptability when making career assessments for tertiary graduates or providing career advice or guidance. In order to improve their ability to manage their own careers in a fragmented and changing employment context, these institutions should offer help on building their knowledge about career self-management, increasing their awareness of the career resources that they could utilise, or extending existing networks so they might take advantage of all the opportunities open to them.

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Appendices

Appendix 1: Online survey invitation to Massey alumni



MASSEY UNIVERSITY

Tertiary Graduates' Career Attitudes, Career Adaptability and Career Self-management

Dear (Name),

As a Massey alumnus who graduated with an Undergraduate or Postgraduate qualification in 2008 from the Palmerston North campus, you are invited to participate in my online survey. With the support of the Department of Human Resource Management and Massey Alumni and Friends Office, this in-depth research about former Massey students is conducted by Vanessa (Yue) Zhang, for the purposes of the fulfillment of a Master of Management thesis.

In the post-industrial era, graduates' employment contexts have dramatically changed. A life-long employment within one organization has been increasingly replaced by fragmented pieces of working experience in different organizations, sometimes even across industries. Thus, a continuous career development of tertiary graduates has become an issue. With all your contribution, this research will endeavor to investigate three aspects - career attitudes, career adaptability and career self-management - that a recent graduate can continuously work on to develop their career.

This online survey will take about 15 minutes of your time to complete. I would very much appreciate a response from you by Nov 25, 2009.

To begin your response to this survey, please click the hyperlink below, or cut and paste the entire URL into your browser.

<http://www.surveymshare.com/survey/take/?sid=96382>

In order to protect your privacy and confidentiality as a participator, Massey Alumni and Friends Office has been directly involved in the selection of participants and the distribution of this

survey invitation with the URL link. Concerning relevant ethical issues, please be kindly informed that,

- Your participation in this study is entirely voluntary and anonymous;
- You have the right to decline to answer particular question or withdraw at any time;
- Completion of the online survey implies consent;
- Your data will be automatically combined with others' immediately after you complete the survey, will be stored at a specific and confidential database provided to the named researcher above as a sponsored member of SurveyShare.com, and will be released to no other party under any circumstances beyond this unique research purpose.

Should you have any questions, or be interested in getting a summary of the research findings when it is concluded, please feel free to contact me on (06) 356 9099 ext 5137, or Y.Zhang5@massey.ac.nz. Also, you are welcome to contact my supervisors Paul Toulson on ext 2389, P.Toulson@massey.ac.nz, or Beth Tootell on ext 2603, B.L.Tootell@massey.ac.nz.

Thank you for your participation.

Yours sincerely



Vanessa (Yue) Zhang
Masters' Student
College of Business
Massey University, Palmerston North

This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researcher named above is responsible for the ethical conduct of this research.

If you have any concerns about the conduct of this research that you wish to raise with someone other than the researcher, please contact Professor Sylvia Rumball, Assistant to the Vice-Chancellor (Research Ethics), telephone 06 350 5249, email humanethics@massey.ac.nz.

Appendix 2: online survey for the present study (print screen)



<http://surveyshare.com>
info@surveyshare.com

Tertiary Graduates' Career Attitudes, Career Adaptability and Career Self-Management

[Click here](#) to continue a partially completed form.

Welcome to my survey.

In the field below, please type your e-mail address:

E-mail Address:

This is an anonymous survey. This survey's creator will not be able to tell which responses are associated with your e-mail address.

SurveyShare will not use e-mail addresses collected when you respond to a survey in any way, other than in the administration of that survey. Your e-mail address will not be shared or sold to others. It will not be used for any Marketing purposes, and you will not receive any e-mail from SurveyShare, Inc.

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Tertiary Graduates' Career Attitudes, Career Adaptability and Career Self-Management (Page 1 of 8)

Part I. Personal Detail

1) Please indicate your gender.

- Male
 Female
-

2) Please select your age band.

- < 20
 20-24
 25-29
 > 30
-

3) Please indicate your ethnicity.

- New Zealand European
 New Zealand Maori
 Pacific Island Peoples
 Asian
 Decline to answer
 Other:
-

4) Which college did you graduate from Massey University?

-- Select Here --

5) What is your highest qualification from Massey University?

-- Select Here --

6) Since graduation, what has been your main activity?

-- Select Here --

7) Please indicate how many times you have changed employers since graduation.

- 1
 2
 >2
 Other: _____
-

8) Please indicate your main residence after graduation.

- Large cities in New Zealand (e.g. Auckland, Wellington, Christchurch)
 Small to medium size cities in New Zealand (e.g. Palmerston North)
 Towns and rural areas in New Zealand
 Large cities overseas (e.g. capital cities, or cities with a population over 1 million)
 Other: _____
-

Tertiary Graduates' Career Attitudes, Career Adaptability and Career Self-Management (Page 2 of 2)

Part II. Career Self-management Behaviour (1)

9) Please indicate the extent to which you have behaved in the following ways OVER THE PAST THREE MONTHS.



	Little or no extent	Limited extent	Some extent	Considerable extent	Great extent
I have reflected on how my past integrates with my future career.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have focused my thoughts on myself as a person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have retrospective in thinking about my career.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have understood a new relevance of past behavior for my future career.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have investigated my career possibilities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have obtained information on the labour market and general job opportunities in my career area.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have investigated information on specific jobs in companies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Tertiary Graduates' Career Attitudes, Career Adaptability and Career Self-Management (Page 3 of 8)

Part II. Career Self-management Behaviour (2)

10) Please indicate the extent to which you have behaved in the following ways OVER THE PAST THREE MONTHS.



	Little or no extent	Limited extent	Some extent	Considerable extent	Great extent
I have worked at my job outside normal working hours.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have sacrificed my leisure time for work-related activities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have adapted my social life to fit in with my colleagues.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Tertiary Graduates' Career Attitudes, Career Adaptability and Career Self-Management (Page 4 of 8)

Part II. Career Self-management behaviour (3)

11) Please indicate to which extent you have behaved in the following ways OVER THE PAST THREE MONTHS. ★

	Little or no extent	Limited extent	Some extent	Considerable extent	Great extent
I have developed skills that will be needed in future career positions in my current workplace.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have looked outside the current workplace for career-related training or qualifications.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have developed skills that will be needed in future career positions in another company.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have obtained broadly based experience in several different positions/workplaces.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have introduced myself to people who can influence my career.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have made contacts with people who work in areas where I would like to work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have asked for career advice from people even when it has not been offered.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have talked about my career problems with someone when necessary (e.g. family members, friends, or important others).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Tertiary Graduates' Career Attitudes, Career Adaptability and Career Self-Management (Page 5 of 8)

Part III. Career Attitudes (1)

12) Please indicate the extent to which you agree or disagree with the statements below. ★

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I am in charge of my own career.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ultimately, I depend on myself to move my career forward.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am responsible for whether my career succeeds or fails.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In relation to my career, I am very much of my own person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If my employer asks me to do something that goes against my own values, I'll follow my conscience.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In the past I have sided with my own values when my superior has asked me to do something I do not agree with.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What I think right in my career is more important than what my employer thinks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In my career, it does not matter much to me how other people evaluate the choices I make.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Tertiary Graduates' Career Attitudes, Career Adaptability and Career Self-Management (Page 6 of 8)

Part III. Career Attitudes (2)

13) Please indicate the extent to which you agree or disagree with the statements below. ★

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I enjoy working with people outside of my organisation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy work assignments that require me to work outside of my organisation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like tasks at work that require me to work beyond my own department.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would enjoy working on projects with people across many organisations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am energized by new experiences and in new situations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If my organisation provided lifetime employment, I would never desire to seek work in other organisations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ideally, I would work for only one organisation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would feel very lost if I could not work for my current organisation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like the predictability that comes with working continuously for the same organisation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Tertiary Graduates' Career Attitudes, Career Adaptability and Career Self-Management (Page 7 of 8)

Part IV. Career Adaptability (1)

14) Please indicate the extent to which you agree or disagree with the below statements. ★

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
In my career, my primary concern is to succeed in what I plan to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy thinking about and making plans for my future career.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have created a plan for myself in my future career.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am extremely "career minded".	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am confused about the whole problem of deciding on a career.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Making up my mind about career has been long and difficult.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am uncertain about the career path that I want to follow.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am concerned that my present career interests may change.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Tertiary Graduates' Career Attitudes, Career Adaptability and Career Self-Management (Page 8 of 8)

Part IV. Career Adaptability (2)

15) Please indicate the extent to which you agree or disagree with the statements below. ★

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
It is hard for me to bounce back quickly when my career plan does not work well.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The problems associated with having a career in the future sometimes seem too great.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Given barriers I will encounter in having a career, I sometimes wonder if I will overcome them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can easily adapt to changes in work settings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I welcome job and organisational changes (e.g. new assignments).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will adjust easily to shifting demands at work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can easily work with new people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



<http://surveyshare.com>
info@surveyshare.com

Tertiary Graduates' Career Attitudes, Career Adaptability and Career Self-Management

Your responses have been submitted.

Thank you for participating in my survey.

If you would like to create a survey of your own, please visit [SurveyShare](http://SurveyShare.com).
In less than five minutes, your new survey could be online and collecting results!



Discover the dramatic changes that are affecting all learners in the new book **The world is open: How web technology is revolutionizing education (2009)**. **The world is open** is a journey into the world of Web 2.0 resources and the future (and present) of global educational opportunities by SurveyShare president Dr. Curtis J. Bonk. Visit worldisopen.com or publisher Wiley.com to learn more.

Appendix 3: Codebook of factors for SPSS analysis

Factor Code in SPSS	Factor Name
CATPsd	career attitudes – Protean self-directed
CATPvd	career attitudes – Protean value-driven
CATBbm	career attitudes – boundaryless mindset
CATBom	career attitudes – boundaryless organisational mobility
CADMp	career adaptability – career planning
CADMd	career adaptability – career decision making
CADAr	career adaptability – career resilience
CADAc	career adaptability – adaptability to changes
CSMexp	career self-management – career exploration
CSMbm	career self-management – boundary management
CSMhc	career self-management – investment in human capital
CSMsc	career self-management – investment in social capital

Appendix 4: Gender and age of participants

		Age range of participants					
			<20	20-24	25-29	>30	Total
Gender	Male	Count	1	21	27	72	121
		% within Age band of participants	100.0%	30.4%	45.8%	34.6%	35.9%
	Female	Count	0	48	32	136	216
		% within Age band of participants	.0%	69.6%	54.2%	65.4%	64.1%
	Total	Count	1	69	59	208	337
		% within Age band of participants	100.0%	100.0%	100.0%	100.0%	100.0%

Appendix 5: Ethnicity of participants grouped by their highest qualifications

		Highest qualifications that participants graduated with in Nov 2008				
		Missing data	Graduate qualification	Postgraduate qualification	Total	
Ethnicity of participants	Missing Data	Count	0	6	3	9
		% within Highest qualifications	.0%	3.1%	2.2%	2.7%
NZ Euro		Count	1	135	89	225
		% within Highest qualifications	20.0%	69.9%	64.0%	66.8%
NZ Maori		Count	0	13	9	22
		% within Highest qualifications	.0%	6.7%	6.5%	6.5%
Pacific Island People		Count	0	2	1	3
		% within Highest qualifications	.0%	1.0%	.7%	.9%
Asian		Count	4	23	23	50
		% within Highest qualifications	80.0%	11.9%	16.5%	14.8%
Decline to answer		Count	0	1	0	1
		% within Highest qualifications	.0%	.5%	.0%	.3%
Other*		Count	0	13	14	27
		% within Highest qualifications	.0%	6.7%	10.1%	8.0%
Total		Count	5	193	139	337
		% within Highest qualifications	100.0%	100.0%	100.0%	100.0%

Appendix 6: Colleges participants graduated from and main resident places after graduation

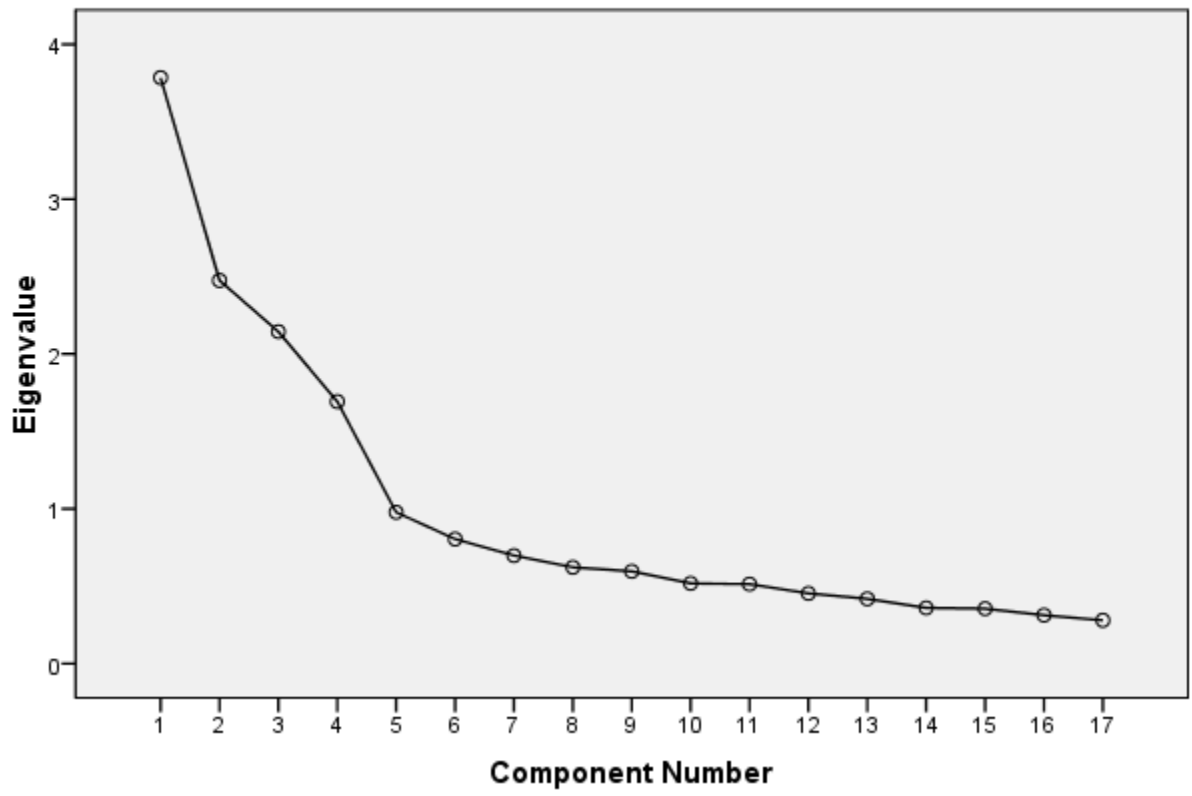
		Main resident places of participants after graduation						
Colleges		Missing data	Large cities in NZ	Small to medium NZ cities	NZ Towns & rural areas	Large cities overseas	Other places	Total
	Missing Data	0	1	4	0	0	0	5
	Business	3	46	30	14	17	5	115
	Creative Arts	0	1	0	0	0	0	1
	Education	0	19	22	16	4	0	61
	Humanities & Social Science	0	24	29	7	8	4	72
	Sciences	0	17	40	8	11	7	83
	Total	3	108	125	45	40	16	337

Appendix 7: Item-coefficients, scree plot, component matrix and component correlation matrix for factor analysis of construct of career adaptability

Table of item-coefficients within the factor

KMO = .827						
Factors	Items	Loadings			Initial Eigenvalues	
		Pattern Coefficients	Structure Coefficients	Communalities	Eigenvalue	Cumulative % of Explained Variance
Career Decision-making	CADMd3r	.847	.808	.671	4.470	29.79%
	CADMd1r	.823	.806	.643		
	CADMd2r	.819	.775	.718		
	CADMd4r	.740	.759	.588		
Career Resilience	CADAr2r	.689	.747	.434	2.807	48.51%
	CADAr3r	.688	.738	.641		
	CADAr1r	.512	.580	.597		
Career Planning	CADMp4	.793	.809	.412	1.811	60.59%
	CADMp2	.789	.800	.683		
	CADMp3	.776	.773	.633		
	CADMp1	.622	.632	.644		
Adapt to Changes	CADAc3	.824	.835	.669	.886	66.50%
	CADAc1	.793	.812	.615		
	CADAc2	.745	.740	.714		
	CADAc4	.626	.646	.424 (delete item)		

Scree Plot



Component Matrix^a

	Component			
	1	2	3	4
CATBbm4	.658		.440	
CATBbm2	.623		.432	
CATBbm3	.604		.491	
CATBbm1	.594		.445	
CATBbm5	.589			
CATPsd4	.568	.458		
CATPsd1	.501	.607		
CATPsd3	.402	.560		
CATPsd2	.492	.557		-.308
CATBom4r	-.349	.536	.341	
CATBom3r	-.325	.455	.429	
CATBom1r		.537	.575	
CATBom2r		.512	.571	
CATPvd2	.427			.659
CATPvd3	.333			.603
CATPvd4				.546
CATPvd1	.437			.504

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

Component Correlation Matrix

Component	1	2	3	4
1	1.000	.170	-.155	.186
2	.170	1.000	-.030	.196
3	-.155	-.030	1.000	-.104
4	.186	.196	-.104	1.000

Extraction Method: Principal Component Analysis.

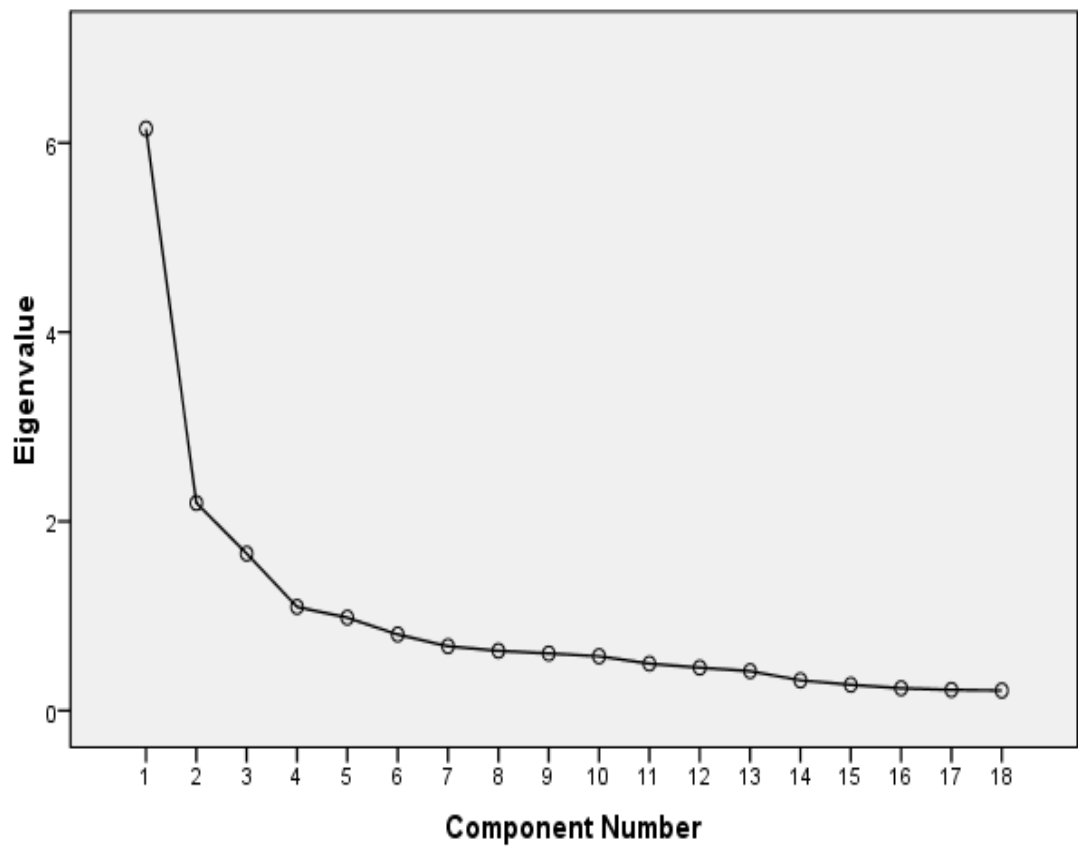
Rotation Method: Oblimin with Kaiser Normalization.

Appendix 8: Item-coefficients, scree plot, component matrix and component correlation matrix for factor analysis of construct of career self-management behaviours

Table of item-coefficients within the factor

KMO = .861						
Factors	Item	Loadings			Initial Eigenvalues	
		Pattern Coefficients	Structure Coefficients	Communalities	Eigenvalue	Cumulative % of Explained Variance
Career exploration	CSMexp7	.843	.820	.729	6.150	34.17%
	CSMexp6	.802	.813	.695		
	CSMexp5	.699	.785	.678		
	CSMexp2	.794	.771	.607		
	CSMexp4	.704	.753	.609		
	CSMexp1	.703	.746	.589		
	CSMexp3	.659	.727	.565		
Investment in Social Capital	CSMsc3	.677	.741	.595	2.194	46.36%
	CSMsc2	.668	.727	.659		
	CSMsc4	.548	.640	.468		
	CSMsc1	.448	.584	.612		
Boundary Management	CSMbm2r	.942	.907	.759	1.660	55.57%
	CSMbm1r	.865	.854	.838		
	CSMbm3r	.651	.677	.481		
Investment in Human Capital	CSMhc1	.862	.830	.743	1.096	61.66%
	CSMhc3	.781	.815	.671		
	CSMhc4	.417	.548	.424		
	CSMhc2	.369	.521	.380 (delete item)		

Scree Plot



Component Matrix^a

	Component			
	1	2	3	4
CSMexp5	.744	-.312		
CSMsc3	.707			
CSMexp6	.706	-.325		
CSMexp7	.679	-.389		
CSMsc2	.675		-.429	
CSMsc4	.653			
CSMsc1	.627		-.381	
CSMhc3	.593	.320		.418
CSMexp4	.587		.442	
CSMhc4	.584			
CSMhc2	.574			
CSMexp3	.573	-.317	.359	
CSMexp1	.536	-.331	.436	
CSMbm3r	.438	.402		
CSMbm1r		.716	.342	
CSMbm2r	.376	.607	.470	-.328
CSMexp2	.413	-.416	.450	
CSMhc1	.534	.378		.561

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

Component Correlation Matrix

Component	1	2	3	4
1	1.000	.208	.343	.381
2	.208	1.000	.131	.341
3	.343	.131	1.000	.125
4	.381	.341	.125	1.000

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

Appendix 9: Average scores that participants gained for each item in constructs of career attitudes, career adaptability and career self-management behaviours

N = 337 participants												
Item	Valid	Missing	Mean	Std. Error of Mean	Median	Mode	Std. Deviation	Variance	Range	Minimum	Maximum	Sum
CSMexp1	337	0	3.26	.062	3.00	4	1.131	1.278	4	1	5	1100
CSMexp2	337	0	3.39	.060	4.00	4	1.100	1.209	5	0	5	1143
CSMexp3	337	0	3.06	.065	3.00	4	1.201	1.443	5	0	5	1031
CSMexp4	337	0	3.00	.065	3.00	4	1.196	1.432	5	0	5	1012
CSMexp5	337	0	3.42	.071	4.00	4	1.298	1.685	4	1	5	1154
CSMexp6	337	0	2.87	.076	3.00	4	1.395	1.945	5	0	5	968
CSMexp7	337	0	2.53	.079	2.00	1	1.452	2.107	5	0	5	853
CSMbm1r*	337	0	3.21	.069	3.00	4	1.270	1.613	4	1	5	1082
CSMbm2r	337	0	2.88	.069	3.00	3	1.275	1.625	5	0	5	970
CSMbm3r	337	0	2.26	.064	2.00	1	1.177	1.385	5	0	5	763
CSMhc1	337	0	3.49	.057	4.00	4	1.047	1.096	5	0	5	1176
CSMhc2	337	0	2.90	.070	3.00	3	1.289	1.662	5	0	5	977
CSMhc3	337	0	3.14	.068	3.00	4	1.254	1.573	5	0	5	1058
CSMhc4	337	0	2.46	.069	2.00	1	1.263	1.595	5	0	5	830
CSMsc1	337	0	2.86	.067	3.00	3	1.224	1.499	4	1	5	965
CSMsc2	337	0	2.76	.066	3.00	3	1.214	1.473	4	1	5	931
CSMsc3	337	0	2.34	.069	2.00	1	1.262	1.593	5	0	5	787
CSMsc4	337	0	2.92	.072	3.00	3	1.326	1.758	5	0	5	984
CATPsd1	337	0	4.10	.054	4.00	4	.999	.998	4	1	5	1383
CATPsd2	337	0	4.26	.045	4.00	5	.834	.695	4	1	5	1437
CATPsd3	337	0	4.19	.048	4.00	4	.888	.789	5	0	5	1411
CATPsd4	337	0	4.04	.046	4.00	4	.835	.698	5	0	5	1361
CATPvd1	337	0	3.84	.049	4.00	4	.906	.821	5	0	5	1293
CATPvd2	337	0	3.58	.054	4.00	4	.995	.989	5	0	5	1205
CATPvd3	337	0	3.27	.051	3.00	3	.939	.882	5	0	5	1102
CATPvd4	337	0	2.88	.059	3.00	2	1.084	1.175	5	0	5	969
CATBbm1	337	0	4.03	.038	4.00	4	.706	.499	4	1	5	1358
CATBbm2	337	0	3.81	.042	4.00	4	.771	.595	4	1	5	1284
CATBbm3	337	0	3.93	.043	4.00	4	.796	.634	5	0	5	1323

Valid	Missing	Mean	Std. Error of Mean	Median	Mode	Std. Deviation	Variance	Range	Minimum	Maximum	Sum	Valid
CATBbm4	337	0	3.99	.042	4.00	4	.771	.595	5	0	5	1346
CATBbm5	337	0	4.23	.043	4.00	4	.791	.626	5	0	5	1427
CATBom1r	337	0	2.45	.057	2.00	2	1.054	1.112	4	1	5	827
CATBom2r	337	0	2.51	.058	2.00	2	1.069	1.144	5	0	5	845
CATBom3r	337	0	2.20	.057	2.00	2	1.055	1.112	5	0	5	741
CATBom4r	337	0	2.72	.058	3.00	3	1.073	1.151	5	0	5	915
CADMp1	337	0	3.90	.048	4.00	4	.879	.772	5	0	5	1313
CADMp2	337	0	3.79	.049	4.00	4	.896	.802	5	0	5	1278
CADMp3	337	0	3.45	.056	4.00	4	1.026	1.052	5	0	5	1163
CADMp4	337	0	3.01	.056	3.00	3	1.019	1.039	4	1	5	1014
CADMd1r	337	0	2.42	.057	2.00	2	1.044	1.089	5	0	5	815
CADMd2r	337	0	2.68	.065	2.00	2	1.189	1.415	5	0	5	903
CADMd3r	337	0	2.55	.063	2.00	2	1.151	1.325	5	0	5	861
CADMd4r	337	0	2.54	.058	2.00	2	1.058	1.118	5	0	5	855
CADAr1r	337	0	2.55	.051	2.00	2	.941	.885	4	1	5	860
CADAr2r	337	0	2.54	.057	2.00	2	1.055	1.112	5	0	5	855
CADAr3r	337	0	2.58	.060	2.00	2	1.107	1.226	5	0	5	871
CADAc1	337	0	4.01	.039	4.00	4	.722	.521	4	1	5	1353
CADAc2	337	0	3.97	.043	4.00	4	.781	.609	5	0	5	1339
CADAc3	337	0	3.96	.039	4.00	4	.712	.507	4	1	5	1335
CADAc4	337	0	4.19	.033	4.00	4	.613	.376	3	2	5	1413

*Items coded with an “r” as their last letter meant they were negatively worded in the online survey.

Appendix 10: Average scores that participants gained for each factor in the constructs of career attitudes, career adaptability and career self-management behaviours

N = 337													
Average score of factors	Valid	Mean	Std. Error of Mean	Median	Mode	Std. Deviation	Variance	Skewness	Std. Error of Skewness	Range	Minimum	Maximum	Sum
TCSMexp/7	337	3.0780	.04933	3.1429	3.43	.90557	.820	-.258	.133	4.00	1.00	5.00	1037.29
TCSMbmRE/3	337	3.1978	.05584	3.0000	3.00	1.02503	1.051	.048	.133	4.00	1.00	5.00	1077.67
TCSMhc/3	337	3.0307	.05145	3.0000	3.00	.94459	.892	-.254	.133	5.001	1.00	5.00	1021.33
TCSMsc/4	337	2.7203	.05470	2.7500	2.00 ^a	1.00420	1.008	.199	.133	4.00	1.00	5.00	916.75
TCATPsd/4	337	4.1484	.03921	4.2500	5.00	.71979	.518	-.948	.133	4.00	1.00	5.00	1398.00
TCATPvd/3	337	3.3274	.03824	3.3333	3.00	.70192	.493	.264	.133	3.67	1.33	5.00	1121.33
TCATBbm/4	337	3.9399	.03381	4.0000	4.00	.62075	.385	-.383	.133	3.25	1.75	5.00	1327.75
TCATBomRE/4	337	3.5000	.04535	3.5000	3.50	.83251	.693	-.332	.133	4.00	1.00	5.00	1179.50
TCADMp/3	337	3.4174	.04465	3.3333	3.67	.81964	.672	-.114	.133	4.00	1.00	5.00	1151.67
TCADMdRE/4	337	3.4347	.05074	3.5000	4.00	.93153	.868	-.426	.133	5.00	1.00	5.00	1157.50
TCADArRE/3	337	3.4303	.04775	3.6667	4.00	.87656	.768	-.301	.133	4.00	1.00	5.00	1156.00
TCADAc/3	337	3.9832	.03371	4.0000	4.00	.61886	.383	-.650	.133	3.67	1.33	5.00	1342.33

- a. Multiple modes exist. The smallest value is shown.
- b. “TCSMexp/7” means the total score of the career exploration subscale for all participants has been divided by the number of total items in this subscale.
- c. *RE means all negatively worded items have been reversed before analysis.

Appendix 11: Results between age groups for the construct of career attitudes

P=.05						
Factor	Age Band	Mean	Std. Deviation	ANOVA Sig. between groups	Significant Difference (SD)	Sig. of Tukey HSD with Eta squared if SD between groups exists
Protean Self-directed	20-24	4.06	.66715	.436	None	-
	25-30	4.11	.69686			
	>30	4.19	.74323			
Protean Value-driven	20-24	3.12	.69281	.008	Significant Difference	20-24 & >30, Sig =.007, Eta = .028 (small effect)
	25-30	3.28	.70072			
	>30	3.41	.69252			
Boundaryless Mindset	20-24	3.87	.69385	.331	None	-
	25-30	3.88	.58607			
	>30	3.98	.60384			
Organizational Mobility	20-24	3.48	.77940	.812	None	-
	25-30	3.56	.77208			
	>30	3.49	.86838			

Appendix 12: Results among ethnicity groups for the construct of career attitudes

P=.05						
Factor	Ethnicity	Mean	Std. Deviation	ANOVA Sig. between groups	Significant Difference (SD)	Sig. of Tukey HSD with Eta squared if SD between groups exists
Self-directed	Missing data	4.15	.75797	.195	None	-
	NZ Euro	4.21	.72161			
	NZ Maori	4.00	.55097			
	Pacific Island	3.83	1.60728			
	Asian	3.97	.67128			
Value-driven	Missing data	3.37	.83807	.170	None	-
	NZ Euro	3.29	.69015			
	NZ Maori	3.17	.66667			
	Pacific Island	3.00	.67036			
	Asian	3.53	.70192			
Boundaryless Mindset	Missing data	4.04	.54491	.142	None	-
	NZ Euro	3.97	.65508			
	NZ Maori	3.97	.46481			
	Pacific Island	3.92	.38188			
	Asian	3.91	.55652			
Organizational Mobility	Missing data	3.42	.395389	.019	Significant Difference	Asian & NZ Euro Sig.=015, Eta = .035 (small effect)
	NZ Euro	3.58	.81261			
	NZ Maori	3.56	.86665			
	Pacific Island	2.91	.94648			
	Asian	3.18	.73547			

**Appendix 13: Results among groups divided by highest qualification for the
construct of career attitudes**

P=.05						
Factor	Qualification	Mean	Std. Deviation	ANOVA Sig. between groups	Significant Difference (SD)	Sig. of Tukey HSD with Eta squared if SD between groups exists
Protean Self-directed	Missing data	3.80	.32596	.067	None	-
	Graduate qualification	4.19	.67817			
	Postgraduate qualification	4.09	.77984			
Protean Value-driven	Missing data	3.33	.52705	.273	None	-
	Graduate qualification	3.27	.69139			
	Postgraduate qualification	3.40	.71916			
Boundaryless Mindset	Missing data	3.35	.51841	.246	None	-
	Graduate qualification	3.90	.66140			
	Postgraduate qualification	4.01	.54948			
Organizational Mobility	Missing data	2.85	.78262	.212	None	-
	Graduate qualification	3.50	.80240			
	Postgraduate qualification	3.51	.87083			

Appendix 14: Results among groups divided by colleges from which participants graduated for the construct of career attitudes

P=.05						
Factor	College of Graduation	Mean	Std. Deviation	ANOVA Sig. between groups	Significant Difference (SD)	Sig. of Tukey HSD with Eta squared if SD between groups exists
Protean Self-directed	Missing data	3.85	.33541	.183	None	-
	Business School	4.24	.66918			
	Non-business School	4.10	.74790			
Protean Value-driven	Missing data	3.33	.52705	.252	None	-
	Business School	3.41	.67623			
	Non-business School	3.28	.71674			
Boundaryless Mindset	Missing data	3.30	.44721	.055	None	-
	Business School	3.98	.58636			
	Non-business School	3.93	.63557			
Organizational Mobility	Missing data	2.85	.78262	.153	None	-
	Business School	3.46	.79811			
	Non-business School	3.53	.84767			

Appendix 15: Results among groups divided by location of participants after graduation for the construct of career attitudes

P=.05						
Factor	Resident places	Mean	Std. Deviation	ANOVA Sig. between groups	Significant Difference (SD)	Sig. of Tukey HSD with Eta squared if SD between groups exists
Protean Self-directed	Missing data	4.58	.72169	.396	None	-
	Large NZ cities	4.23	.63745			
	Small/medium NZ cities	4.12	.74164			
	NZ towns & rural areas	4.14	.78424			
	Large cities overseas	4.05	.75786			
	Other	3.92	.78379			
Protean Value-driven	Missing data	3.77	1.17063	.697	None	-
	Large NZ cities	3.36	.70826			
	Small/medium NZ cities	3.31	.68546			
	NZ towns & rural areas	3.24	.67570			
	Large cities overseas	3.39	.69548			
	Other	3.20	.83333			
Boundaryless Mindset	Missing data	4.33	.57735	.015	Significant Difference	small/medium NZ cities & large NZ cities, p=.030 Eta = .042 (small effect)
	Large NZ cities	4.03	.61756			
	Small/medium NZ cities	3.79	.62653			
	NZ towns & rural areas	4.09	.64216			
	Large cities overseas	3.98	.57565			
	Other	3.87	.43780			
Organizational Mobility	Missing data	2.83	1.60728	.274	None	-
	Large NZ cities	3.57	.80202			
	Small/medium NZ cities	3.38	.86867			
	NZ towns & rural areas	3.62	.78625			
	Large cities overseas	3.56	.80858			
	Other	3.57	.74004			

Appendix 16: Results between age groups for the construct of career adaptability

P=.05						
Factor	Age Band	Mean	Std. Deviation	ANOVA Sig. between groups	Significant Difference (SD)	Sig. of Tukey HSD with Eta squared if SD between groups exists
Career Planning	20-24	3.52	.79970	.473	None	-
	25-30	3.40	.79215			
	>30	3.39	.83463			
Career Decision-making	20-24	3.37	.98975	.022	Significant Difference	25-30 yrs & >30 yrs, Sig =.020, Eta = .021 (small effect)
	25-30	3.16	.91986			
	>30	3.53	.90181			
Career Resilience	20-24	3.42	.77540	.064	None	-
	25-30	3.19	.86905			
	>30	3.50	.90267			
Adaptability to Changes	20-24	3.93	.65175	.212	None	-
	25-30	3.88	.53466			
	>30	4.03	.62787			

Appendix 17: Results among ethnicity groups for the construct of career adaptability

P=.05						
Factor	Ethnicity	Mean	Std. Deviation	ANOVA Sig. between groups	Significant Difference (SD)	Sig. of Tukey HSD with Eta squared if SD between groups exists
Career Planning	Missing data	3.61	.77981	.204	None	—
	NZ Euro	3.78	.83214			
	NZ Maori	3.5	.70336			
	Pacific Island	4.22	.38490			
	Asian	3.37	.83367			
Career Decision making	Missing data	3.54	.88356	.129	None	—
	NZ Euro	3.45	.90749			
	NZ Maori	3.50	1.15728			
	Pacific Island	4.25	.66144			
	Asian	3.17	.94550			
Career Resilience	Missing data	3.47	.80300	.074	None	—
	NZ Euro	3.46	.85964			
	NZ Maori	3.64	1.07353			
	Pacific Island	4.11	.19245			
	Asian	3.11	.87445			
Adaptability to Changes	Missing data	4.11	.57314	.093	None	—
	NZ Euro	3.99	.61520			
	NZ Maori	4.03	.69700			
	Pacific Island	4.44	.50918			
	Asian	3.77	.59951			

Appendix 18: Results among groups divided by qualification for the construct of career adaptability

P=.05						
Factor	Qualification	Mean	Std. Deviation	ANOVA Sig. between groups	Significant Difference (SD)	Sig. of Tukey HSD with Eta squared if SD between groups exists
Career Planning	Missing data	2.87	1.01653	.291	None	-
	Graduate qualification	3.41	.78394			
	Postgraduate qualification	3.45	.85946			
Career Decision-making	Missing data	3.20	.69372	.098	None	-
	Graduate qualification	3.52	.92063			
	Postgraduate qualification	3.31	.94365			
Career Resilience	Missing data	2.80	.38006	.051	None	-
	Graduate qualification	3.52	.82886			
	Postgraduate qualification	3.32	.93372			
Adaptability to Changes	Missing data	3.87	.18257	.569	None	-
	Graduate qualification	3.96	.62164			
	Postgraduate qualification	4.02	.62508			

Appendix 19: Results among groups divided by colleges that participants graduated from for the construct of career adaptability

P=.05						
Factor	College of Graduation	Mean	Std. Deviation	ANOVA Sig. between groups	Significant Difference (SD)	Sig. of Tukey HSD with Eta squared if SD between groups exists
Career Planning	Missing data	2.47	.18257	.093	None	–
	Business School	3.54	.79757			
	Non-business School	3.37	.82281			
Career Decision-making	Missing data	3.35	.84039	.117	None	–
	Business School	3.29	.93244			
	Non-business School	3.51	.92772			
Career Resilience	Missing data	3.00	.52705	.289	None	–
	Business School	3.36	.90112			
	Non-business School	3.47	.86755			
Adaptability to Changes	Missing data	3.87	.18257	.719	None	–
	Business School	4.01	.58879			
	Non-business School	3.97	.64109			

Appendix 20: Results among groups divided by resident places for the construct of career adaptability

P=.05						
Factor	Qualification	Mean	Std. Deviation	ANOVA Sig. between groups	Significant Difference (SD)	Sig. of Tukey HSD with Eta squared if SD between groups exists
Career Planning	Missing data	4.55	.50918	.081	None	-
	Large NZ cities	3.39	.79436			
	Small/medium NZ cities	3.41	.80942			
	NZ towns & rural areas	3.47	.73306			
	Large cities overseas	3.52	.94247			
	Other	3.06	.87956			
Career Decision-making	Missing data	2.75	1.52069	.023	Significant difference	Small/medium NZ cities & NZ towns & rural areas, p=.038 Eta=.038 (small effect)
	Large NZ cities	3.39	.94918			
	Small/medium NZ cities	3.37	.87851			
	NZ towns & rural areas	3.84	.82965			
	Large cities overseas	3.46	.97163			
	Other	3.12	.104881			
Career Resilience	Missing data	2.56	1.50308	.155	None	-
	Large NZ cities	3.50	.84585			
	Small/medium NZ cities	3.32	.86957			
	NZ towns & rural areas	3.44	1.0000			
	Large cities overseas	3.61	.80379			
	Other	3.37	.72903			
Adaptability to Changes	Missing data	4.44	.50918	.079	None	-
	Large NZ cities	4.05	.63445			
	Small/medium NZ cities	3.89	.60848			
	NZ towns & rural areas	4.00	.64745			
	Large cities overseas	4.14	.53316			
	Other	3.71	.59473			

Appendix 21: Results among different age groups for the construct of career self-management behaviours

P=.05						
Factor	Age Band	Mean	Std. Deviation	ANOVA Sig. between groups	Significant Difference (SD)	Sig. of Tukey HSD with Eta squared if SD between groups exists
Career Exploration	20-24	3.37	.75330	.002	Significant difference	20-24 yrs & >30 yrs, Sig = .002 Eta = .038 (small effect)
	25-30	3.19	.74441			
	>30	2.95	.96771			
Boundary Management	20-24	3.13	.93492	.507	None	-
	25-30	3.33	.96688			
	>30	3.18	1.07017			
Investment in Human Capital	20-24	3.41	.82324	.000	Significant difference	20-24 yrs & >30 yrs, Sig = .000; 25-30 yrs & >30 yrs, Sig = .001. Eta = .082 (moderate effect)
	25-30	3.32	.84411			
	>30	2.82	.95064			
Investment in Social Capital	20-24	3.19	.83805	.000	Significant difference	20-24 yrs & >30 yrs, Sig = .000; 25-30 yrs & >30 yrs, Sig = .003. Eta = .087 (moderate effect)
	25-30	2.97	.91144			
	>30	2.49	1.01392			

Appendix 22: Results among ethnicity groups for the construct of career self-management behaviours

P=.05						
Factor	Ethnicity	Mean	Std. Deviation	ANOVA Sig. between groups	Significant Difference (SD)	Sig. of Tukey HSD with Eta squared if SD between groups exists
Career Exploration	Missing data	2.98	.96372	.010	Significant difference	NZ Euro & Asian, Sig = .047, Eta = .040 (moderate effect)
	NZ Euro	2.98	.92378			
	NZ Maori	3.50	.85003			
	Pacific Island	3.52	.29738			
	Asian	3.37	.70642			
Boundary Management	Missing data	2.86	1.07881	.255	None	-
	NZ Euro	3.25	1.01938			
	NZ Maori	3.09	1.13707			
	Pacific Island	3.00	1.20185			
	Asian	3.23	.93375			
Investment in Human Capital	Missing data	3.42	.94168	.005	Significant difference (ignore)	SD only exists in Missing data group and NZ Euro group, so SD was ignored
	NZ Euro	2.89	.98667			
	NZ Maori	3.32	.67829			
	Pacific Island	3.67	.33333			
	Asian	3.19	.72581			
Investment in Social Capital	Missing data	2.81	1.03314	.253	None	-
	NZ Euro	2.64	1.02474			
	NZ Maori	2.95	.87843			
	Pacific Island	3.33	.38188			
	Asian	2.88	.93982			

Appendix 23: Results among qualification groups for the construct of career self-management behaviours

P=.05						
Factor	Qualification	Mean	Std. Deviation	ANOVA Sig. between groups	Significant Difference (SD)	Sig. of Tukey HSD with Eta squared if SD between groups exists
Career Exploration	Missing data	2.28	1.16496	.363	None	-
	Graduate qualification	3.09	.84463			
	Postgraduate qualification	3.08	.97039			
Boundary Management	Missing data	3.67	.84984	.385	None	-
	Graduate qualification	3.23	1.03977			
	Postgraduate qualification	3.13	1.00923			
Investment in Human capital	Missing data	2.87	.76739	.706	None	-
	Graduate qualification	3.06	.95274			
	Postgraduate qualification	2.99	.94231			
Investment in Social Capital	Missing data	2.40	.80234	.641	None	-
	Graduate qualification	2.75	1.02141			
	Postgraduate qualification	2.68	.98923			

Appendix 24: Results among groups divided by colleges that participants graduated from for the construct of career self-management behaviours

P=.05						
Factor	College of Graduation	Mean	Std. Deviation	ANOVA Sig. between groups	Significant Difference (SD)	Sig. of Tukey HSD with Eta squared if SD between groups exists
Career Exploration	Missing data	2.91	1.14553	.886	None	—
	Business School	3.09	.88411			
	Non-business School	3.07	.91536			
Boundary Management	Missing data	4.00	.84984	.212	None	—
	Business School	3.18	1.02140			
	Non-business School	3.18	1.02728			
Investment in Human Capital	Missing data	2.80	.76739	.446	None	—
	Business School	3.12	.87308			
	Non-business School	2.99	.98388			
Investment in Social Capital	Missing data	2.15	.51841	.377	None	—
	Business School	2.77	1.02681			
	Non-business School	2.71	.99904			

Appendix 25: Results among groups divided by main resident places of graduates for the construct of career self-management behaviours

P=.05						
Factor	Residence	Mean	Std. Deviation	ANOVA Sig. between groups	Significant Difference (SD)	Sig. of Tukey HSD with Eta squared if SD between groups exists
Career exploration	Missing data	1.81	1.40214	.136	None	–
	Large NZ cities	3.05	.91087			
	Small/medium NZ cities	3.07	.90107			
	NZ towns & rural areas	2.96	.93784			
	Large cities overseas	3.43	.70060			
	Other	3.01	.95969			
Boundary management	Missing data	2.78	1.67774	.930	None	–
	Large NZ cities	3.23	1.03986			
	Small/medium NZ cities	3.21	1.06024			
	NZ towns & rural areas	3.24	1.02154			
	Large cities overseas	3.07	.88831			
	Other	3.12	.97278			
Investment in human capital	Missing data	4.00	1.00000	.092	None	–
	Large NZ cities	3.00	.93948			
	Small/medium NZ cities	2.99	.85178			
	NZ towns & rural areas	2.87	1.02346			
	Large cities overseas	3.35	.76590			
	Other	2.98	.95428			
Investment in social capital	Missing data	4.08	.80364	.025	SD ignored	SD was caused between the group of missing data & Other
	Large NZ cities	2.74	.96914			
	Small/medium NZ cities	2.73	1.05848			
	NZ towns & rural areas	2.54	.97743			
	Large cities overseas	2.93	.87886			
	Other	2.22	.93486			