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Career switching in the 21st century: an extended integrative approach

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ABSTRACT

Career switching represents an important component of employee turnover. The scourge of costs associated with employee turnover traverses geographies, organisations and occupations. Despite variations in reported figures, it is estimated that the total cost associated with employee turnover ranges between 120% and 200% of the annual salary of the employee who leaves depending on the skills, experience and level of the employee in the organisation. Whilst a lot of research has been done on job change, much less has been published on career change. In addition to exploring why professionals switch careers, this study aimed to probe differences between career switchers and non-switchers, define typical profiles for the career switcher and non-switcher, as well as predict the propensity of a professional to switch career given an array of input variables.

A survey was administered to 117 professionals across various disciplines where each respondent had received some form of professional training in a defined occupation. Each respondent was asked whether or not he or she had changed career. An integrated theoretical framework drawn from prominent career development theories was used to compare, profile, predict and distinguish between career switchers and non-switchers. Thematic analysis, independent t-tests, classification trees and binary logistic regression were used to answer several questions.

The study strengthened the case for an integrative approach to career studies and found that professionals switched careers in pursuit of greater challenges, better opportunities and career growth. Differing personal goals were most important in distinguishing between career switchers and non-switchers. Whilst age and the level of education were associated with career change; professionals with a boundaryless mindset and high curiosity were more likely to switch career compared to their counterparts who scored low on these attributes.

KEYWORDS

Voluntary, Career switch, Occupation change, Professionals

DECLARATION

I declare that this project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

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Date

CONTENTS

LIST OF TABLES

LIST OF FIGURES

1. CHAPTER 1: INTRODUCTION TO RESEARCH PROBLEM

1.1. Problem definition

Despite investing huge amounts of resources on Talent Development, Business Organisations increasingly lose the trained talent due to employee attrition (Siebert & Zubanov, 2009). In some instances, employee attrition is attributed to job change, whilst in other instances it is attributed to career change and other reasons. In any case, Organisations incur financial and other forms of loss when talent leaves their employ. In some cases, talent earmarked for succession plans leaves an Organisation and such departure destabilises plans and triggers efforts to recruit and appoint replacement staff, which in itself can be time-consuming. Even if company policies compel an employee to pay back money spent on their training, financial loss cannot be completely avoided because such repayments seldom include interest and the opportunity costs of such money having been spent or invested elsewhere cannot be accurately determined.

1.2. Evidence to the problem

Even though the reported cost of employee turnover varies across the globe, the universal message is that employee turnover comes at a huge cost. Allen, Bryant & Vardaman (2010) leveraged studies conducted in the USA and reinforced the view that the total costs associated with turnover range between 90% and 200% of annual salary. Pepe (2010) concurred with this and asserted that the total cost of employee turnover is a minimum of one year's pay and benefits and a maximum of two years' pay and benefits when direct and indirect costs are combined. A recent study in Malaysia concluded that in addition to obvious and direct costs such as accrued leave and recruitment fees to replace staff, there are other indirect costs including lost productivity and also the fact that a newly-on-boarded employee takes time to perform and deliver at the same level of output as an experienced employee who would have left the organisation (Kuean, Kaur & Wong, 2010). Economic theory purports that

certain efficiencies come with doing the same work over a long time and that is commonly called “gains from specialisation”.

In a separate study; Chisholm, Russell & Humphreys (2011) looked at patterns, determinants and costs associated with turnover in allied health workers in rural Australia. They found that the median total cost to replace an allied health professional was $45 781 Australian dollars which is almost half a million South African Rand. This figure was a median implying that there were instances when it was higher than the median amount. Another study was conducted in the hotel industry in Australia where employee turnover was found to be between 39% and 84% depending on job type. Furthermore, employee replacement costs were estimated to be about a third of Human Resource Management budgets (Davidson, Timo & Wang, 2010). This is particularly concerning in the Australian context because the hotel industry is estimated to have a rate of return of just over 12% which is much lower than the all industries average at 15.2%. Cost savings would be welcome and the Australian Government has been trying to attract investment in the hotel industry.

In South Africa, (PWC, 2014) estimated the cost of losing key employees to be between 30% and 120% of annual guaranteed remuneration. Two years prior to the PWC report, one of the big four banks published on its website that the estimated turnover cost of a salaried employee was between 100% and 200% of that person’s remuneration including benefits and other compensation (Standard Bank, 2012). This variability depends on the level of the role in the organisation, the hourly rate of compensation per employee and so forth. Given that South Africa is already known to have serious shortage of skilled Professionals, employee turnover is more damaging to Organisations as it will take longer to get the right resource to replace an employee who leaves. Coetzee & Van Dyk (2012) conducted a study focused on Medical and Information Technology professionals and found that these specialised and scarce resources have a tendency to leave their organisations and country. They further asserted that apart from the costly replacement and training of new staff in these industries, turnover increases the workload of and demands on existing staff members; leading to overwork and burnout, which in turn led to more turnover.

Reflecting on the above-mentioned examples from the USA, Australia, Malaysia and South Africa; one can infer that the scourge of employee turnover traverses not just

geographies, but also professions. These few examples reported turnover across the health, information technology and hotel industries. Whilst the pains associated with employee turnover cannot be doubted, what is not clear is where the employees who leave organisations exactly end up. Could it be that employees leave their organisations to join another employer doing essentially the same type of work, or is it that they leave both the organisation and profession altogether to pursue other interests or callings?

1.3. Motivation for the study

Whilst a lot of research has been done in understanding employee attrition, turnover theory has placed much more focus on job change and left very little done on career switching. Carless & Arnup (2011) reinforced the view that career change occurs less frequently and is not well-understood compared to job change. Career change can be distinguished from job change which is movement to a similar job or a job that is part of a normal career path (Carless & Arnup, 2011). Career Change, on the other hand, is where an employee, for example, leaves an organisation to join another organisation in a different profession altogether. Career change is characterised by moving into a new profession or occupation that is not part of a typical career progression (Rhodes & Doering, 1983). When a Medical Doctor leaves the medical field to become a Consultant in the ICT sector, for example, constitutes career switch. When a Chartered Accountant leaves a bank to go and work at another bank, or join an insurance company whilst still a Chartered Accountant, that constitutes job change.

Given the above background, it would not be unreasonable to suggest that Organisations need to understand reasons for career switching as much as they understand reasons for job change. Equipped with such understanding, Organisations can reduce employee turnover and better-realise returns on their investments on Talent Management.

1.4. Scope and aims of the study

A key distinction is made between involuntary and voluntary turnover. Involuntary turnover is initiated by the Organisation, for example retrenchment, whereas voluntary turnover is employee-initiated like career or job change (Allen, Bryant & Vardaman, 2010). This study is confined to voluntary career change.

The purpose of this study was mainly threefold. In addition to exploring why professionals switch careers, the study seeks to profile the typical career switcher and non-switcher, as well as predicting career switching likelihood. Though studies have been carried out in the past to establish why people change careers, it does not nullify the need for current reflection on the subject. Effects of time and changes in other environmental variables could lead to differences in the results obtained by carrying out the same study at different times (Okhuysen, Lepak, Ashcraft, Labianca, Smith & Steensma, 2015). There is no way, however, that we could know whether or not such differences exist unless we carry out the study. It could also be possible that findings from this study confirm and corroborate findings from earlier studies. Apart from the possibilities of picking up differences or similarities between this study and earlier studies, there exists a possibility to discover completely new information that could add to the body of knowledge on the subject of career change.

Empirical data collected could potentially help profile the typical career-switcher and non-switcher, and hopefully lead to the development of a model to predict propensity to switch career given an array of input variables. The ability to profile and predict career switching tendency can aid organisational Leaders in managing staff in a more personalised way tailored to the individual. Knowing the drivers to career switching disposition, for example, could inform Management on how to create conditions in their own organisation that a valued employee would otherwise leave the organisation for and seek in other environments. Such an approach can potentially create stickiness or job embeddedness and diminish chances of top-performing staff leaving. Findings from this study will benefit Organisations both during recruitment and when making decisions on which talent to invest in and which talent not to invest in. When recruiting potential employees especially for roles where an employee is required to be with the firm in the long term, organisations can administer a test as part of psychometric assessments to get the probability that the resource will switch or not switch career in the short term.

This, alongside other important factors, can guide in making decisions whether to bring an employee on board or not. There is a growing view that the best way to combat employee turnover is to hire right in the first place. (Kruger, 2015). As far as employees already in the organisation are concerned, administering the assessment could be helpful when deciding which talent to invest in and which talent not to invest in. One could argue that organisations typically expect returns on their investments and that necessitates an employee to stay in the organisation for at least an acceptable minimum period post-training. Lost investment in training and lost staff expertise are examples of turnover costs and opportunity costs (Lashley, 2001).

Providers of Vocational Guidance (Educators and Academia) will potentially benefit from the findings of this study in tailoring offerings to the present-day needs of society. If a vocational guidance practice would run the predictive model to assess a counselee's propensity to switch career and find it high, they could emphasise teaching the counselee skills to adapt, as opposed to fixating the counselee on a career path deemed to suit them best. Vocational education equips an individual for economic independence, self-actualization and also being productive in various fields of learning (Idialu, 2013). The quality of vocational guidance could be measured by the degree to which a counselee who goes through the program attains self-actualization, economic independence and productivity. Career switching could signal that the originally-recommended career may not have helped a counselee achieve these and triggered the need to switch. Adhering to an initially-recommended career could suggest that a counselee achieved fulfilment, economic success and contentment thereby eradicating the need to switch. If this approach could be extended such that we determine how many out of a hundred counselees later switched careers and how many stuck to the originally-recommended career ten years after counselling, we could have a useful statistical metric to infer the quality of vocational guidance. A longitudinal study would be appropriate to draw such inferences.

Exploring ways to verify the efficacy of vocational guidance programs; Perry, Dauwalder & Bonnett (2009) concluded that both quantitative and qualitative methods be adopted, as neither approach would be comprehensive in its own right. Some vocational guidance institutions are government-funded.

Funders want an objective way to assess the performance, usefulness or uselessness of the programs they inject money into. Understanding career switching patterns of counselees could help evaluate the quality of guidance over a period of time. Longitudinal qualitative and quantitative studies could deliver such understanding and guide sponsor decisions. Individuals deliberating on which profession to get into might also draw helpful insights in guiding that decision.

Whilst studies on career change date back to the twentieth century, this study aims to better-understand career change in the 21st century landscape. Focus on the 21st century is key as findings from the study can be applicable to the present-day professional. The relevance and applicability of findings from earlier studies to the present-day professional will not only be tested, but also potentially be extended to factor environmental and other changes since the time when those studies were conducted. An integrative approach is advocated to ensure that the cumulative knowledge gathered through decades is not lost, and also that multiple perspectives and theories are taken into consideration in shaping final outputs. In the last quarter of the 20th century, studies on career change were exploratory in nature, seeking to understand reasons why people changed careers (Neapolitan, 1980). Thereafter, studies went a step further to consider not only the determinants of career change, but also the actual process involved when changing career (Rhodes & Doering, 1983). This study brings new perspectives in both trying to profile (distinguish) between career switchers and non-switchers as well as predicting likelihood to switch career.

As mentioned above, the total costs associated with voluntary employee turnover go far beyond monetary to include opportunity costs and other non-quantitative aspects such as loss of workforce diversity. Tables 1 and 2 below list the various costs incurred when an employee and the organisation go their separate ways and also when the organisation works on replacing the employee. Tangible separation costs are easily quantifiable whereas intangible separation costs are not easily quantifiable. Replacement costs across most industries include costs for recruitment, selection, on-boarding the new employee, and training the new employee to a point where the new employee can deliver work of the same quality or better than that of the employee who left.

Table 1: Separation costs of turnover

Separation Costs	*Tangible*
	HR staff time (e.g., salary, benefits, exit interview)
	Manager's time (e.g., salary, benefits, retention attempts, exit interview)
	Accrued paid time off (e.g., vacation, sick pay)
	Temporary coverage (e.g., temporary employee, overtime for current employees)
	Intangible
	Loss of workforce diversity
	Diminished quality while job is unfilled
	Loss of organizational memory
	Loss of clients
	Competition from quitter if he/she opens a new venture
	Contagion — other employees decide to leave
	Teamwork disruptions
	Loss of seasoned mentors

Table 2: Replacement costs of turnover

Replacement Costs	*General Costs*
	HR staff time (e.g., benefits enrollment, recruitment, selection, orientation)
	Hiring manager time (e.g., input on new hire decision, orientation, training)
	Recruitment
	Advertising
	Employment agency fees
	Hiring inducements (e.g., bonus, relocation, perks)
	Referral bonuses
	Selection
	Selection measure expenses (e.g., costs of RJP, work samples, selection tests)
	Application expenses
	Orientation and Training
	Orientation program time and resources
	Formal and informal training (time, materials, equipment, mentoring)
	Socialization (e.g., time of other employees, travel)
	Productivity loss (e.g., loss of production until replacement is fully proficient)

Source: Allen, Bryant, and Vardaman (2010)

2. CHAPTER 2: LITERATURE REVIEW

2.1. Introduction

In seeking deeper understanding of career switching, this study took into account the broader context of career development theory. In this section, typical characteristics of the twenty-first century workplace are presented first. A brief reflection on early career change literature follows. Thereafter, career development theories are presented next. Looking at selected prominent theories, a broad distinction between early theories spanning mid-to-end of the 20th century and later theories at the advent of the 21st century will be provided. The merits and limitations of respective theories will be discussed in relation to the degree of usefulness or uselessness in explaining career switching amongst twenty-first century professionals. As will be explored, no particular theory can single-handedly explain career switching comprehensively thereby necessitating review of existing literature to seek improvements. An integrated model will be recommended for adoption in pursuit of this study.

2.2. Unpacking the Twenty-First Century Workplace

Given that career switching does not happen in a vacuum, it may be worthwhile looking at characteristics of the twenty-first century workplace. This will contextualise the conversation on career switching and serve as a reference point against which existing and future literature will be evaluated for usefulness and/or uselessness in explaining career switching behaviour. In a recent study, Okhuysen et al. (2015) asserted that both work and the workplace are ever-changing – posing challenges in the study thereof. Furthermore, they argued that whilst some forms of occupations and organisations are slowly disappearing such as the video rental store, there are some older forms of occupation and organisations that remain.

Noteworthy is that the remaining ones frequently undergo reconfiguration, reconstitution and reform often leading to significant changes in how work gets executed, the personnel doing the work, and sometimes the technology employed in performing the work. The changes observed in the workplace are attributed to a wide array of factors including social and political movements, increased interconnectedness of economies, and macroeconomic shifts such as moving from an Industrial to a Knowledge-based economy (Okhuysen et al., 2015). In light of the dynamic nature of work and the workplace, one could argue that the ability to adapt to a rapidly-changing environment is an essential skill that could influence career switching and non-switching inclination.

Bassot (2012) questioned the relevance of the traditional "matching model" where providers of vocational guidance sought to match an individual's personality profile to job roles and recommended certain professions for certain personalities. Instead, Bassot proposed a Career Learning and Development (CLD) model deemed suitable for the twenty-first century. The CLD model is based on recent theory that seeks to explain how people make career decisions as time progresses, and amid globalised economies, rapidly-changing and volatile labour markets. Whilst Bassot acknowledges that traditional approaches such as trait/factor matching have helped practitioners for much of the twentieth century, She contests that there great need for newer approaches that are more applicable to twenty-first century life, otherwise society escalates the risk of theory getting obsolete and worse still, irrelevant.

Equipped with this background, one can review career theories and assess the merits and limitations of each theory in relation to the needs of the twenty-first century. Furthermore, commonalities and differences between the theories will be explored.

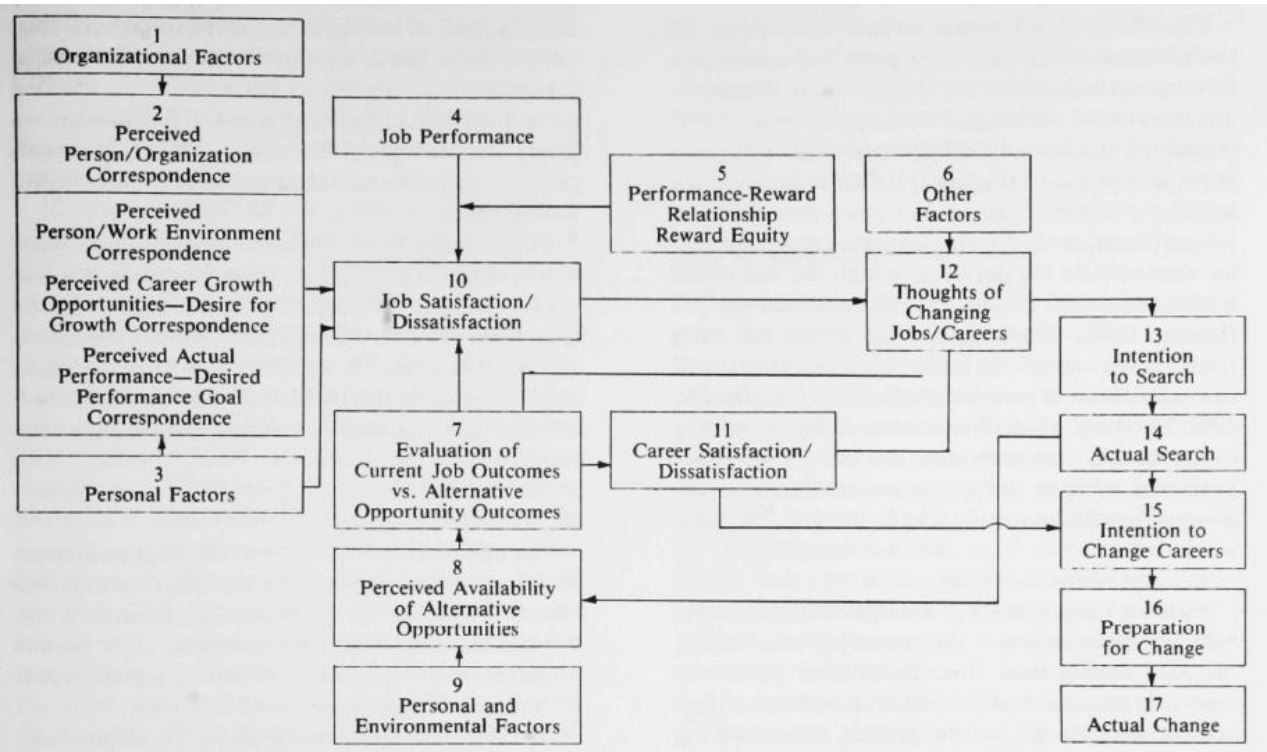
2.3. Early literature on career change

Although research on career changes increased in the 1970s and 1980s, there was little consistent understanding of the determinants of career change partly due to the absence of a comprehensive framework to study career change as well as cross-sectional and retrospective designs (Rhodes & Doering, 1983). Numerous studies produced divergent results with regards to the motivation and triggers for career change.

They further asserted that despite the intimate relationship between career change and turnover, theory in those two areas developed separately and with no attempts to integrate at the time. Recognizing this inadequacy, Rhodes & Doering (1983) developed an integrated model of career change which addressed both the determinants of career change and the actual process involved when changing career.

The integrated model of career change is illustrated below.

Figure 1: Integrated model of career change



Rhodes & Doering (1983)

In addressing both the determinants and the process of career change, the integrated model of career change represented significant improvement to earlier studies that barely went beyond exploring why people changed career. Deemed comprehensive since the 1980s, the question is whether or not the integrated model of career change is still adequate to capture and explain career change in the context of the volatile and dynamic nature of the 21st century workplace described above.

This study will test if some of the determinants of career change portrayed in the integrated model still apply to the 21st century. Furthermore, the study will bring additional perspectives in profiling the typical career switcher and non-switcher as well as attempting a model to predict the propensity to switch career. The evolution of Career Development Theory saw researchers put forward many theories from which the study draws constructs and statements that may be useful in building profiles and predicting inclination to switch. The next section will present career development theories grouped under traditional, contemporary and next-generation theories.

2.4. Traditional Career Theories

Of the Traditional Career Theories that dominated much of the twentieth century, prominent ones include Super's Life-Span Life-Space (LSLS), Schein's Career Anchors, Holland's Congruence as well as Social Cognitive Career Theory by Lent and others. Built on enhancing his earlier Career Stage Model, Super's Life-Span Life-Space theory talks of a developmental process as one takes on various roles at different career stages through a lifetime. Super asserted that individuals go through different life stages and developmental tasks as part of their career decision-making process (Sterner, 2012). The stages include Growth (birth to 15 years), Exploration (15-24 years), Establishment (25-44 years), Maintenance (45-64 years) and Decline (65 and above). Whilst in the growth stage one typically develops interests, curiosity and fantasies; the exploration stage is characterised by narrowing down choices and implementing. Work experiences and trials lead to stabilisation in the Establishment phase. Updating and continual adjustment form part of the Maintenance stage. The decline stage entails diminishing work outputs, retirement planning and eventual retirement. These stages comprise the Life-Span dimension of the theory.

The Life-Space dimension involves the various roles that an individual can play throughout the above-described life-span. According to Sterner (2012), Super initially conceptualised six roles namely child, student, worker, citizen, homemaker and leisurite. The mix of roles one can play may vary from one career stage to another. Moreover, some roles may diminish in importance whilst others gain prominence as one progresses through life stages.

An individual in the Maintenance stage is more likely to play the worker role than he or she may play the child role. Even though the model suggests a linear and age-dependent approach to career development and choices, recycles are experienced sometimes when, for example, an individual in the maintenance stage of one profession decides to change career and start in the establishment stage of another profession.

A key feature of the LSLS approach is the phenomenon of Self-Concept which talks to how one perceives self. As one takes on various roles at different career stages, his or her self-concept changes. In Super's view, personal traits such as self-efficacy, interests and self-esteem form part of self-concept. As one's self-concept changes, it may trigger greater inclination towards roles other than an individual's present role thereby igniting the desire to change career.

Given the nature of the twenty-first century workplace, one could argue that the LSLS theory has got both merits and limitations in explaining career switching. On the upside; apart from recognising the interactive relationship between an individual and the organisation, LSLS takes into account how an individual's work role (worker) relates with other roles in the individual's personal life, for example, citizen, thereby alluding to the search for balance. Furthermore, LSLS acknowledges the non-static nature of career choice through recycles and also in early years of one's career as manifested in the need for exploration and the potential for switching.

On the downside, LSLS emphasises the need for exploration before one chooses a specific career hoping to see longevity in the chosen career. What if one is in an environment where jobs are so scarce that there is little room for exploration? LSLS tends to place little significance on contextual supports and limits in the broader environment beyond the person-organisation and person-personal-roles realms. Furthermore, LSLS predominantly sees growth in a chosen career path. Considering the multidirectional nature of careers in the 21st century, the theory has limited practical significance. Whilst environments perceived to harmonise the work role with other roles in one's life are deemed more attractive destinations, this may be addressed through job change and not necessarily career change. The LSLS approach has limited usefulness and is not convincingly comprehensive to explain career switching among professionals.

Holland's person-environment congruence theory is also widely-quoted in career studies. The theory purports that people have higher affinity towards careers conforming to their personality orientation and defines congruence as the alignment between work environment and personality. People with better match between their work environment and personalities are less likely to switch careers when compared to their less congruent peers. When switching careers, professionals tend to be drawn towards more congruent environments. While studying career change and career persistence in relation to person-environment congruence, Donohue (2006) found that career persisters scored higher on congruence than career switchers and also that career changers moved to careers better-aligned with their personalities compared to respective present roles. Despite findings in support of Holland's theory, Donohue acknowledged that numerous other studies produced mixed evidence on the effect of congruence on career switching behaviour. Congruence theory has been rather useful and conclusive in studies on job satisfaction and performance.

Whilst Holland's theory does explain career switching, it does so only in part, rendering it incomplete (not comprehensive). The theory overlooks other potentially important considerations beyond person-environment, for example, the need for extrinsic rewards. Given that work environments are dynamic in the 21st century and change is fast-paced, it could be difficult to find and establish a stable career. Personality traits also change as one gets exposed to different environments hence not constant over time. The notion of matching personality traits to particular work environments assumes that both the personality and the environment are static and this assumption seems out of tune with attributes of the twenty-first century workplace. In order to stay attuned to the realities of the present-day workplace, the ability to adapt to a constantly-changing career landscape could be more useful. Trait theories are of limited relevance to the twenty-first century as articulated earlier on.

Career Anchors Theory (CAT) is yet another popular one in twentieth-century literature. In his later publication, Schein, (1996) defined a person's career anchor as his or her self-concept comprising self-perceived abilities and talents, basic values as well as an evolved sense of needs and motives in relation to the career. He asserted that while career anchors evolve through life and occupational experience, they are of a permanent stable nature once formed, representing those values and motives one would not give up when compelled to make a choice (Schein, 1996). Anchors included managerial competence, technical competence, security, entrepreneurial creativity, stability, autonomy, dedication to a cause, lifestyle, challenge an identity. Furthermore, Schein posited that a single dominant anchor would emerge from these anchors and would guide and limit one's career path. Contrary to Schein's view, recent scholars argued for a multi-dimensional anchor approach where an individual's career decisions could be guided by several anchors. In a recent study, (Wils, Wils & Tremblay, 2010) support the existence of, and propose multiple dominant anchors.

In its original form, Schein's theory purports that once a dominant anchor is found, it confers stability. It could be argued that this view limits one's ability to adapt to changing circumstances and workplace conditions when need arises. Should one fail to give up a particular anchor at all costs, it implies rigidity and gives the notion that an individual would unlikely change career – rendering the usefulness of this theory limited when studying career change. As mentioned previously, the nature of the twenty-first century workplace is such that adaptation is an essential ingredient to success as a professional. On the other hand, it is debatable whether in some cases a dominant anchor could be at play across careers for a single individual, for example; if one's dominant anchor is commitment to serving underprivileged communities, whether one does that as a Medical Doctor offering subsidised and free consultations, or achieves the same purpose offering career guidance lessons to communities who would otherwise not afford them is immaterial. This would then suggest that not all career changes emanate from changes in career anchors and necessitate tests.

CAT does not place weight on contextual limits and supports but rather places emphasis on the individual's internal locus of control. Though the individual's career anchor(s) is/are important, it can be contested that inclusion of contextual barriers and supports to career decisions would make CAT richer in explaining career switching.

Of the traditional career theories reviewed, Social Cognitive Career Theory (SCCT) is probably the most comprehensive. In seeking to better-understand drivers for career choice, (Lent, Brown & Hackett, 1994) developed an integrative model that became known as Social Cognitive Career Theory. The theory leveraged studies from earlier Researchers and packaged various motivational theories into constructs comprising Self-Efficacy, Outcome Expectations and Personal Goals. In a follow up study, (Lent et al., 2000) extended the theory to factor contextual barriers and supports as an individual interacts with the environment. More recently, additional work was done to incorporate a view on adaptive behaviour throughout one's career (Lent & Brown, 2013). Since the three articles all pertain to Social Cognitive Career Theory, I treat them as one and find them useful because the Researchers updated the theory in progression of time to sustain its relevance. Noteworthy is the fact that the first article has almost 3000 citations between 1994 and 2014, averaging almost 150 citations per year and this suggests high impact.

Founded in Bandura's social cognitive theory, SCCT integrates self-efficacy and other motivational theories like expectancy theory and goal setting. Constructs of self-efficacy, outcome expectations and personal goals jointly and to varying extents influence career choice and the desire to switch at any point in time through one's professional journey in a lifetime. The theory recognises contextual supports and barriers in choosing careers and deliberations on switching. SCCT has been extended to include adaptive behaviour as one's environment or work content changes.

Not only does SCCT touch on the individual (self-efficacy, expectations and personal goals), but takes contextual supports and barriers to career decisions into account and also recognises the importance of adaptive behaviour – an essential ingredient to the twenty-first century workplace. When combined, this set of factors renders SCCT considerably comprehensive and flexible to explain career choices and switching behaviour. Whilst SCCT acknowledges the need to adapt, it could be improved by becoming explicit on the personal goals construct. Augmenting SCCT with contemporary theories like the Protean or Kaleidoscope models could be helpful.

Table 3: Evaluating traditional career theories in relation to career

Career Theory	Summary	Merits	Limitations	Relation to Career Switching
Super's lifespan-life space model	Non-linear development through various stages as one progresses through life. An improvement to the earlier Career Stage Model which purported linear progression through stages. The stages include: - Growth - Exploration - Establishment - Maintenance, and - Disengagement/Decline Roles identified initially include: - Child - Student - Leisurite - Worker - Citizen - Parent - Homemaker	Apart from recognising the interactive relationship between an individual and the organisation, it takes into account how an individual's work role relates with other roles in the individual's personal life – alluding to the search for balance. Acknowledges the non-static nature of career choice in early years of one's career hence the need for exploration and potential for switching.	Emphasises the need for exploration before one chooses a specific career hoping to see longevity in the chosen career. What if one is an environment where jobs are so scarce that there is little room for exploration? Tends to place little significance on contextual supports and limits in the broader environment beyond the person-organisation and person-personal-roles realms. Sees growth in a chosen career path. Considering the multidirectional nature of careers in the 21st century, the theory has limited practical significance. Not comprehensive. Founded on trait theories	Limited usefulness. Environments perceived to harmonise the work role with other roles in one's life deemed more attractive destinations. This may be addressed through job change and not necessarily career change.
Holland Career congruence of workers	Posits that individuals move from roles where person-environment congruence is low and towards roles where person-environment congruence is deemed higher.	Can be useful in explaining career switch but only in part.	Given work environments are dynamic in the 21st century and change is fast-paced, it could be difficult to find and establish a stable career. Personality traits also change as one gets exposed to different environments hence not constant over time. The ability to adapt would be more useful. Not comprehensive. What about other considerations beyond person-environment e.g. the need for extrinsic rewards? Founded on trait theories	Posits that individuals move from roles where person-environment congruence is low and towards roles where person-environment congruence is deemed higher. If a Lawyer moves from one Law Firm with a less desirable culture (lower congruence) to another Law Firm with a more desirable culture (more congruent) that constitutes job change and not career change.

Career Theory	Summary	Merits	Limitations	Relation to Career Switching
Lent and Brown's Social Cognitive Career Theory	Constructs of self-efficacy, outcome expectations and personal goals jointly and to varying extents influence career choice and the desire to switch at any point in time through one's professional journey in a lifetime.	Recognises contextual supports and barriers in choosing careers and deliberations on switching. Recently extended to include adaptive behaviour as one's environment or work content changes. Very comprehensive. Founded in Bandura's social cognitive theory and integrates self-efficacy and other motivational theories like expectancy theory and goal setting.	Though it acknowledges the need to adapt, it could be improved by becoming explicit on the personal goals construct. Augmenting SCCT with contemporary theories like the Protean or Kaleidoscope models could be helpful.	Comprehensive and flexible. Those with low ability to adapt will be less likely to move into new careers whereas those with great ability to adapt in any new role are likely to switch as long as there are other compelling factors to change careers.
Schein's Career Anchors Model	Schein, (1996) defined a person's career anchor as his or her self-concept comprising self-perceived abilities and talents, basic values as well as an evolved sense of needs and motives in relation to the career. He asserted that while career anchors evolve through life and occupational experience, they are of a permanent stable nature once formed, representing those values and motives one would not give up when compelled to make a choice (Schein, 1996). Anchors included managerial competence, technical competence, security, entrepreneurial creativity, stability, autonomy, dedication to a cause, lifestyle, challenge an identity.	It acknowledges the power and role of the individual in driving own career decisions.	Later studies contested the existence of a single dominant anchor and argued for a multi-dimensional anchor approach where career decisions are guided by multiple dominant anchors concurrently. Focus is placed on the individual's attributes and the theory does not recognise the significance of external and contextual factors in driving career decisions.	Failure to acknowledge the influence and impact of contextual supports and barriers limits the usefulness of career anchor theory in explaining career change.

2.5. Contemporary Career Theories

In a recent study; Gubler, Arnold & Coombs (2014) reinforced the assertion that over the last two decades several “new” or “contemporary” career concepts surfaced in careers literature. Triggered by technological, economic and other societal developments, contemporary theories assume that “individuals are, or should be, increasingly mobile and self-directed in their careers”. They provided a distinction from the so-called old, traditional, bureaucratic or organisational career characterised by low mobility, organisational career management and hierarchical advancement. Some of the frequently-encountered theories include the Boundaryless, Protean and Kaleidoscope career models.

Krumboltz & Levin (2010) asserted that career paths are becoming far less predictable and demand much more flexibility from individuals. In a separate study, Verbruggen (2012) acknowledged that career literature saw a turn from emphasizing the traditional approach where individuals would work for one or two organisations in a lifetime and progressed along pre-defined upward career paths, to a state where changing employers and professions has become commonplace. Verbruggen positioned the boundaryless career as the most influential of new constructs that attempt to model this reality. More recently, Lochab & Mor (2013) presented the broader notion of self-managed careers along paths other than the linear progression of responsibility and remuneration in the organisation. They specifically identified boundary-less and protean career models as the most influential approaches relating to self-managed careers. They further argued that periods of relative career stability are decreasing as individuals are constantly in a state of being and move between and through various roles. We now examine each of these new constructs. A boundary-less career refers to a career that transcends boundaries (Verbruggen, 2012). Mobility is not only across organisational boundaries but includes other types of boundaries such as occupational, cultural and geographical ones. A further distinction is made between psychological and physical boundaries. Psychological mobility has to do with people’s attitudes towards the observable act of crossing boundaries (physical mobility). The theory posits that two dimensions namely a boundary-less mindset and organisational mobility preference influence career decisions.

As far as career switching is concerned, the theory provides guidance on how people of certain orientations are likely to respond to dynamic work environments typical of the 21st century. Briscoe, Hall & DeMuth (2006) found that boundaryless mindset and organisational mobility preference were positively associated with openness to experience. Openness to experience could suggest higher propensity to switch careers. In a later study, (Briscoe & Finkelstein, 2009) concluded that organisational mobility preference was negatively associated with organisational commitment. This could explain job change and not necessarily career change.

The theory places focus on going beyond organisational boundaries whereas what is important in studying career switching is going beyond boundaries of a particular occupation to enter different occupations. Furthermore, it places emphasis on the individual and pays little attention to contextual limits and supports in the greater environment. Whilst the individual is the focal point in self-managed careers, one cannot overlook the relevance of the context and environment in which career self-management occurs.

Gubler, Arnold & Coombs (2014) reviewed the protean career concept (PCC) and highlighted a number of attributes typical of the protean career. Central to the protean career is the notion that as an individual pursues self-fulfilment, he or she makes career decisions which may be redirected from time to time to align with the changing needs of the individual. The individual shapes the protean career more than the organisation. Gubler et al. concurred with earlier assertions that the definition of career success shifts from the “way to the top” to the “way to the heart” (Hall, 1996). Success no longer manifests in growing salaries and hierarchical progression but feelings of self-accomplishment. Furthermore, the PCC emphasises the ability to adapt, development of identity through an evolving self-concept, and a series of short learning cycles that lead to enhanced performance when repeated (Hall, 2002). Continuous learning is valued throughout a lifetime as it better-positions the individual to cope with frequent changes.

Briscoe et al. (2006) found that self-directed career management and value driven orientation were positively associated with proactive personality, openness to experience, career authenticity and mastery learning goal. In a separate study, Cakmak-Otluoglu (2012) found that self-directed career management negatively correlated with continuance commitment. Subject to empirical investigation, one could argue that both findings suggest lower inertia and higher propensity to leave a current organisation or occupation and openness to switch to another occupation or organisation. The protean career model could be quite useful when studying career switching in the twenty-first century workplace especially because it stresses the importance of adaptability and pursuit of self-fulfillment. Despite these strengths, the drawback is that the model tends to place so much focus on the individual and his or her relationship with the organisation and in the process pay little attention to contextual supports and barriers that could influence career decisions, examples of which are provided in the next paragraph.

Consider someone who wants to join the army for example. Whether one has great affinity for a particular role or occupation, there is a specified age restriction that has to be adhered to at all costs. Should one not meet the specified age requirement, the context would have served as a barrier to entering one's preferred occupation. On the other hand, there care cases where context can support occupational preferences. Consider a case where one wants to be a commercial pilot, for example. Regulations stipulate a minimum number of flight hours that one has to make before qualifying to be a commercial pilot. Should one come from a financially-crippled background (contextual barrier), he or she may have the aptitude and preference to be a pilot but then not become one due to financial constraints incapacitating that individual to afford flight school fees. If, however, there are accessible bursaries or other mechanisms to fund flight school, the individual could leverage such support to pursue and drive the desired occupation to fruition, in which case context serves as support.

Table 4: Evaluating contemporary career theories in relation to career change

Career Theory	Summary	Merits	Limitations	Relation to Career Switching
Hall's Protean Career Model	Individuals who hold protean career attitudes are intent upon using their own values (versus organizational values for example) to guide their career ("values-driven") and take an independent role in managing their vocational behavior ("self-directed"); An individual who did not hold protean attitudes would be more likely to "borrow" external standards, as opposed to internally developed ones, and be more likely to seek external direction and assistance in behavioral career management as opposed to being more proactive and independent (Briscoe, Hall & DeMuth, 2006);	It provides guidance on how people of certain orientations are likely to respond to dynamic work environments typical of the 21st century.	Focus is placed on the individual's attributes and the theory does not recognise the significance of external and contextual factors in driving career decisions. Not comprehensive.	• Briscoe et al. (2006) found that self-directed career management and value driven orientation were positively associated with proactive personality, openness to experience, career authenticity and mastery learning goal; • Briscoe and Finkelstein (2009) found that value driven orientation negatively correlated with normative commitment; • Cakmak-Otluoglu (2012) found that self-directed career management negatively correlated with continuance commitment. He also found that value driven orientation negatively correlated with normative commitment;
Sullivan and Arthur's Boundaryless Career Model	Two dimensions namely a boundary-less mindset and organisational mobility preference influence career decisions.	It provides guidance on how people of certain orientations are likely to respond to dynamic work environments typical of the 21st century.	Whilst the theory can be powerful in explaining job change where an individual moves from one organisation to another but still in the same profession, it does not robustly assert any implications for career switching. Not comprehensive. Places emphasis on the individual and pays little attention to contextual limits and support in the greater environment. It talks about going beyond organisational boundaries whereas what is important in studying career switching is going beyond boundaries of a particular profession to other professions.	Briscoe et al. (2006) found that boundary-less mindset and org. mobility preference were positively associated with openness to experience. Openness to experience could suggest higher propensity to switch careers. Briscoe and Finkelstein (2009) found that org. mobility preference was negatively associated with all the three dimensions of org. commitment

2.6. Next Generation Career Theories

Looking beyond the protean and boundaryless career models, Sullivan & Baruch (2009) suggested newer conceptualisations and subsequently coined the term "integrative frameworks" representing efforts to bring together selected concepts from the protean and boundaryless approaches. Hybrid and kaleidoscope careers are prime examples of newer concepts. Whilst hybrid careers manifest elements of both traditional and contemporary career concepts, the kaleidoscope model represents an alternative lens through which careers can be examined and neither represents extensions of the protean nor boundaryless approaches (Sullivan & Baruch, 2009).

Developed independently from the protean and boundaryless concepts, the Kaleidoscope Career Model (KCM) describes how individuals change the pattern of their career by rotating varied aspects of their lives to arrange their relationships and roles in new ways (Sullivan & Baruch, 2009). Changes may occur in response to internal changes like maturation, or due to environmental changes for example, being laid off. This suggests that rearrangements can be voluntary or involuntary but in either case the role of the individual in adjusting to the triggering event is prominent. Sullivan & Baruch (2009) further assert that individuals weigh various options and choices to come up with the best alignment among work demands, opportunities and constraints, as well as relationships and personal values and interests. The KCM's anatomy comprises three constructs namely authenticity, balance and challenge which are present at all times in an individual's life span. Whilst authenticity refers to one's quest to be true to self, balance refers to an individual striving to strike an equilibrium between work and non-work demands including but not limited to personal interests, family and friends. Challenge alludes to the individual's desire for stimulating work as well as career advancement. Intellectual stretch, autonomy and being responsible for important aspects of a given work environment are examples of elements that constitute challenge. A key feature of the KCM is that all three parameters (constructs) are present at all times but vary in relative intensity as an individual strives to maintain the best fit in response to changes at any given point in time.

The KCM could be useful in studying career switching among professionals. The joint impact of the three parameters is necessary and sufficient to create a pattern defining and guiding career decisions and transitions. The model allows for flexibility and adaptation, empowers the individual, and also recognizes the importance of the context in which changes and responses happen. However, it can be argued that the model is not comprehensive as it does not explicitly take into account other aspects that could drive career decisions. Consider a situation where someone's need (not desire) for extrinsic rewards drives the decision to switch careers even when pursuing a new career implies violating one's values for authenticity, balance and/or challenge? One could, for example, take on a new job or pursue a new career because of higher remuneration (extrinsic reward) even if the new occupation is boring, limits flexibility, and/or aggravates imbalance. This inadequacy could be addressed through an integrative approach where another model augments the KCM to attain comprehensiveness.

Table 5: Evaluating next-generation career theory in relation to career change

Career Theory	Summary	Merits	Limitations	Relation to Career Switching
Mainiero and Sullivan's Kaleidoscope Career Model	Constructs of Authenticity, Balance and Challenge are dynamic as one progresses through life.	Acknowledges the non-static nature of drivers of career choice and triggers of career switch. Flexible	Not comprehensive. What if someone's desire/need for extrinsic rewards drives the decision to switch careers even when pursuing a new career implies violating one's needs for authenticity, balance and/or challenge? Places too much focus on the power of the individual in shaping own career and pays little attention to contextual barriers and supports in the bigger external environment.	The desire to switch careers is driven by a shift in the configuration and extent to which these constructs influence one's career. That can vary at different times in one's career.

2.7. A Brief Reflection on Adaptability

Given the nature of the 21st century work landscape described in section 2.2 above, the importance of adaptability in professionals cannot be overstated. Adaptability is defined as 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). It points to the quality of being able to change, without great difficulty, to fit new or changed circumstances (Savickas, 1997). Furthermore, adaptability involves planning attitudes, exploration of the environment and self, as well as informed decision-making. Though the importance of adaptability is punted in modern literature as described in section 2.2 above, the actual concept of adaptability is rooted in Super's original Career Development Model that later evolved and became known as the Life-Span Life-Space (LSLS) theory discussed in section 2.4 above. The seeds of the career adaptability construct are found in Super's original model (1957), with early childhood fantasy – involving role play to explore the meanings and possibilities of work – eventually giving way in later childhood to interests and capacities that guide aspirations, activity selection and career planning (Hartung, Porfeli & Vondracek, 2008).

Safiah & Noordin (2013) described the career adaptability construct as the 4 Cs namely career concern, career control, career curiosity and career confidence. Career concern refers to an individual's views about his or her current career as well as how the future career would be like where planning and preparing for the future career is central. Career control has to do with the individual's custodial responsibility to shape own career. Despite suggestions or views from other people, an individual with career control will consider those views but always makes the final call on career choice. The capacity to find out more information and explore options pertaining to a career characterises a person with career curiosity. Activities for a curious individual could range from attending discipline-specific conferences, seeking expert opinion and commentary on matters pertaining to the career as well as reading relevant material in both formal and informal publications. Career confidence depicts the pursuit of success by rising above obstacles and any encountered challenges (Safiah & Noordin, 2013).

Whilst Safiah & Noordin (2013) used the career adaptability construct to investigate if its elements had any influence on intention to leave an organisation for ICT professionals, this study aimed to test if the construct influenced likelihood to leave one occupation and moving into another. Comparisons to check if career switchers and non-switchers differed or not on this construct were performed.

2.8. The Case for an Integrative Approach

In light of the traditional, contemporary and next generation career theories presented thus far, it is evident that no theory single-handedly explains all aspects of career switching let alone career development in an individual's lifetime. Noteworthy is that various theories exhibit commonalities even though terminology differs between theories. Without dwelling much on this, a few comparisons will be provided. The self-concept presented in Life-Span Life-Space theory could be associated with self-efficacy in Social Cognitive Career Theory. Similarly, the personal values-driven approach in the protean career model can be closely linked to anchors in career anchor theory and also authenticity in the kaleidoscope approach. It can be argued that in striving to be true to oneself (authenticity), personal values take centre stage. Furthermore, it would not be unreasonable to contest that regardless of one's career anchor and whatever number of times that anchor changes in a lifetime, when an individual consistently acts in accordance with own anchor(s); that individual will be true to self at each stage hence authenticity. Facts can change as time progresses and circumstances change and so does authenticity. The Authenticity construct of the Kaleidoscope Career Model does capture and incorporate elements of the Career Anchor Theory hence CAT can be dropped from the integrative model.

Now that the respective merits and limitations of various theories in explaining career switching have been discussed, it is time to reflect on an optimal way forward that captures the reality of career switching as much as conceivable. Citing conceptual shortcomings and empirical flaws in career literature; Ricardo, David & Dany (2014) advocated an integrative approach that draws on strengths of various theories to enrich the understanding of careers.

The authors posit that integrative research allows for cumulative perspectives and lenses to be considered, and not ignoring nor despising competing approaches when deemed not to fit celebrated frameworks. The proposed approach aimed to avoid the risk of reification as a consequence of neglecting scholarship that does not fit enough with the dominant view (Ricardo, David & Dany, 2014).

In conjunction with adaptability, a model that integrates aspects of social cognitive career theory, kaleidoscope, protean and boundaryless career models is proposed. An additional construct will be included that aims to measure an individual's willingness and ability to adapt to change. As highlighted before, social cognitive career theory (SCCT) is quite comprehensive, has got rich origins in motivational theories, recognises contextual supports and barriers and has been updated to address adaptive behaviour. It was also asserted that the theory could be improved by providing a clearer view of the personal goals construct. Parameters of the kaleidoscope model namely authenticity, balance and challenge could be viewed as, and embody, a wide array of personal goals. On the other hand, the Kaleidoscope Career Model (KCM) represents post-contemporary (next-generation), adaptive and self-directed careers that recognise the existence of non-work aspects that need to be balanced with work commitments. Though aligned to the demands of the twenty-first century workplace described above, the KCM lacks comprehensiveness and could be improved by integration with SCCT. The expected outcomes construct of SCCT, for example, could address cases where KCM cannot explain antagonistic aspirations such as taking a higher-paying job despite aggravating imbalance. Including the other models will enrich the inputs required to profile switchers and non-switchers. Consequently, the empirical leg of this study will draw on constructs from several models and also include an additional construct to gauge inclination to adapt.

2.9. Conclusion

Whilst the case for an integrated theoretical framework has been made in section 2.8 above, a key question remains with regards to which constructs will form part of the integrated model. As mentioned before, the terminology and semantics used in different theories sometimes talk about the same thing using different words. As a start, personal judgment helps in assessing which constructs or variables to exclude from the integrated model though only to some extent. One could, for example, identify and remove constructs and/or variables that seem duplicated and redundant when looking at constituent elements of the integrated model as one whole. Statistical analysis and data mining techniques can then augment personal judgment in identifying variables that may be powerful in explaining career change and throw away less useful variables. Principal component analysis (PCA) of collected data can help in data reduction and identifying important factors that explain career change.

Apart from understanding typical profiles of career switchers and non-switchers, an important artefact from this study will be a model which will predict a professional's propensity to switch career given a set of variables pertaining to that professional. Furthermore, the study will enrich society's modern-day perspective on why professionals change careers in light of the fast-paced technological advancements.

3. CHAPTER 3: RESEARCH QUESTIONS AND HYPOTHESES

3.1. Introduction

This chapter outlines specific questions which this study seeks to address. The reasons to which career switching can be attributed are explored first. Secondly, constructs of the integrated theoretical framework are used to investigate differences between career switchers and non-switchers. Thereafter, the relationships of demographic variables including age and level of education, to career switching, are probed. Lastly, the chapter looks at how the propensity to switch career can be predicted.

3.2. Question 1: Why do professionals switch careers?

Whilst researchers in the last quarter of the 20th century attributed career change to a variety of reasons, it may be worthwhile probing reasons for career change today. Outcomes could see present-day scholars validate, refute, modify and/or add to the historically accepted views on the subject of career change. Given that work is both content and context (Okhuysen et al., 2015), it is arguable that the progression of time has changed the context in which the same questions were asked back then and now, justifying the need to pose the questions today.

3.3. Question 2: How do career switchers differ from non-switchers?

An integrated theoretical model which compares career switchers and non-switchers on numerous attributes as informed by a myriad of theories will be employed in seeking comprehensive understanding of what distinguishes career switchers from non-switchers.

3.4. Question 3: What is the relationship between level of education and career switching?

Whilst the integrated theoretical framework addresses attitudes, capacity to adapt and other personal attributes, it neither makes mention of nor takes into account demographic variables such as age and level of education. It can be argued that the exclusion of demographic variables limits the understanding of career switching.

3.5. Question 4: What is the relationship between age-group and career switching?

Following the same rationale as in Research Question 3 above, the relationship between another demographic variable (age) and career switching will be probed. Frequency distributions of respondents by age-group will be analysed.

3.6. Question 5: Are the profiles of career switchers and non- switchers the same?

Using classification trees, the typical profiles of career switchers and non-switchers will be determined and compared.

3.7. Question 6: Is inclination towards career switching predictable?

Answering this research question serves to give organisations a practical model (tool) that they can use to guide hiring decisions as well as direct their deliberations on which talent to invest in and which talent not to invest in. Data mining techniques will be employed to build predictive models, the best of which will be selected and deployed to guide practice.

3.8. Conclusion

Augmenting constructs of the integrated theoretical framework with demographic variables is expected to yield comprehensive understanding of career switching. Whilst it can be contested whether or not the model to predict career switching should include demographic variables in addition to constructs of the integrated theoretical framework, comparison of a model that excludes demographic variables and one that includes them can and will indicate which one of the two models performs better in predicting career switching.

4. CHAPTER 4: RESEARCH METHODOLOGY

4.1. Introduction

Given the constraint of the period within which the study had to be completed, a cross-sectional survey was conducted where respondents came from various industries including Banking, Insurance, Telecommunications, Health, Law and Engineering. Drawing respondents from multiple sectors of the economy aimed to help generalise findings of the study to professionals and not confining findings to a specific discipline. Different research questions required different analytical approaches, the specifics and rationale of which are presented in subsequent sections of this chapter. The research methodology chapter was concluded by highlighting limitations that could hamper or compromise the validity of outcomes of this study. Highlighting limitations set the stage for future researchers in the field of career change to improve on this study and enhance the quality of findings.

4.2. Choice of Methodology

A cross-sectional survey was conducted. Oates (2010) asserted that the idea of a survey is to obtain the same kinds of data from a large group of people in a standardised and systematic way, with the aim of searching patterns in the data that can be generalised to a larger population than the targeted group. This view precisely characterised this study given that one questionnaire with standard questions was administered to all respondents. Standardisation was an attractive feature because it facilitated comparison of the collected data between groups of interest, for example, career switchers and non-switchers. Furthermore, a survey allowed obtaining data from a large number of respondents in a cost-effective manner. This was achieved through sampling to generate findings that were representative of the entire population at a significantly lower cost than collecting data for the whole population (Saunders & Lewis, 2012).

Even though a longitudinal study would have enhanced the quality of conclusions drawn from this study, it was not practical to do a longitudinal study in light of the timeframe within which this study should have been completed. Henceforth, a cross-sectional study was carried out where data was collected at a point in time (Saunders & Lewis, 2012).

The study was predominantly quantitative as ninety percent of the data collected was numeric based on a Likert-type scale and only a tenth of the questions required open-ended textual responses that captured reasons for career switch as well as demographics such as gender and population group. The 5-point Likert scale was appealing because it was not only showing the presence or absence of attributes of interest, but also the degree or strength of those attributes that were present in a respondent. The open-ended questions allowed for thematic analysis to be conducted on the responses submitted and were particularly important in answering the first research question that explored why professionals switch careers.

Whilst the anatomy of the actual questionnaire is discussed in the section about the measurement instrument below, it is worthwhile to mention that questions spanned constructs from the models discussed above. Whilst constructs drove questions, the questions pointed to variables of interest, and variables in turn; suggested data that was collected for subsequent analysis.

4.3. Population

The universe comprised professionals across various industries and sectors of the economy. As a way to ensure that respondents were professionals, permission was sought from Institutional and Organisational leaders of environments that typically employ professionals to distribute the questionnaire in those environments. It could potentially happen that an individual who made tea or cleaned the office could complete the questionnaire when not exactly a professional. On the questionnaire itself, a respondent mentioned his or her profession and level of education to guard against the risk of wasting resources collecting data from non-professionals.

In addition to approaching specific Organisations like hospitals, professional associations were also requested to allow questionnaires to be distributed to their members. The South African Medical Association (SAMA) and the Law Society of South Africa are examples of the associations from which permission was sought.

Noteworthy is that one question required the respondent to indicate whether he or she switched career in professional history. The response to that question allowed the population to be divided into subgroups of career switcher and non-switcher allowing basis for comparisons of respective groups to answer the second research question. In data mining literature, that variable is the one being predicted in supervised learning and known by various names including dependent variable, output variable, target variable and/or outcome variable (Shmueli, Patel & Bruce, 2011).

4.4. Unit of Analysis

The unit of analysis was the individual. Naturally, people take on professions as individuals and not collectively hence the study landed itself to the individual as a logical unit of analysis. Understanding individuals could put organisations in a better position to decide which talent to invest in and which talent not to invest in.

4.5. Sampling Method and Size

Since there was no complete (exhaustive) list of professionals readily available, this study landed itself to non-probability sampling. Non-probability sampling is a variety of sampling techniques for selecting a sample when there is no complete list of the population, nullifying the possibility of selecting a random sample (Saunders & Lewis, 2012). Consequently, the chance or probability of selecting each member of the population cannot be known.

Lohr (2009) asserted that in quota sampling, just like in stratified sampling, the population is divided into different subpopulations but with one important difference: probability sampling is not used to choose individuals in the subpopulation for the sample. Lohr (2009) further argued that in extreme versions of quota sampling, the choice of units in the sample is completely at the discretion of the researcher, so a sample of convenience is chosen with each subpopulation. In this study, the researcher selected environments where professionals work but did not go to the extent of specifying individuals who completed questionnaires hence mitigated the risk of using a sample of convenience. One other attribute of quota sampling is that specified numbers (quotas) of particular types of population units are required in the final sample (Lohr, 2009). At the outset of this study, the researcher wanted a minimum of 120 respondents where at least a third represented career switchers. Quota sampling was most appropriate and is a type of nonprobability sampling that ensures the sample selected represents certain characteristics in the population that the researcher has chosen (Saunders & Lewis, 2012). Getting a sample of professionals that comprised a mix of career switchers and non-switchers were the characteristics of interest.

Though the optimal sample size could not have been known beforehand, it was not unreasonable to contest that the intended analytical method of using classification trees was largely data-driven hence the greater the number of respondents obtained the better (Shmueli, Patel & Bruce, 2011). Having said that, it was important to get characteristics of interest represented in the sample, not just getting a large sample where desired characteristics were not represented. In addressing selection bias, Lohr (2009) argued that large unrepresentative samples can perform as badly as small unrepresentative samples whilst more costly, and emphasized that the design of the survey is far more important than the absolute size of the sample. The aim of this study was to have at least forty career switchers and more non-switchers to allow meaningful application of classification trees. Of the hundred and seventy questionnaires that were distributed to potential respondents, a hundred and twenty were returned yielding a response rate of about seventy percent. Of the 120 completed, one was spoilt and the other two were poorly populated and discarded effectively leaving 117 (68%) available for analysis.

Discipline-specific bias was mitigated by getting responses from professionals that came from diverse career backgrounds including Banking, Insurance, Telecommunications, Medicine, Education, Law and Engineering. I did not, for example, only interview Medical Doctors who switched careers because there could have been reasons unique to their discipline which triggered career switches. The sample had to be representative of a diversity of career backgrounds so that findings could be generalizable in understanding career switches**.**

4.6. Measurement Instrument

In this study, a questionnaire was used to collect data from respondents. Each respondent was asked to answer the same set of questions in the same order. Drawing on constructs from the proposed integrative model, a mix of open-ended and closed questions (5-point Likert scale) made up the questionnaire. The open-ended questions constituted less than a tenth of the total number of questions/statements. In addition to showing presence or absence of a particular attribute, the Likert scale also gave a measure of the strength or degree to which a particular attribute was present or absent.

Right at the beginning, a respondent was asked if he or she switched career in his or her professional history. Responses to this question created a binary variable which was then used to split the data into two subgroups namely the career switchers and non-switchers. The proposed integrated theoretical framework was then used to compare the two groups using statistical and data mining methods including t-tests, classification trees and binary logistic regression.

In spite of having wanted to collect as much data as practical, the questionnaire was just long enough to cover essentials and short enough to retain the respondent's interest. Saunders & Lewis (2012) argued that a respondent almost switches off on getting to four pages of a questionnaire. Presented in landscape fashion, the length of the questionnaire preserved the quality of responses obtained when respondents' concentration was peak.

Paying attention to question-order effects is frequently cited in questionnaire design guidelines (Lohr, 2009).The ordering of the questions was done such that the most

important constructs of the integrated theoretical framework were presented first. This flow ensured that in the event of a respondent's concentration diminishing towards the end, critical responses would have been obtained.

A pilot-test questionnaire was distributed to eight professionals to gauge readability, the flow of questions, and also the average time it took to complete the questionnaire. The original questionnaire had 111 questions/statements and averaged about seventeen minutes to complete. The respondents' feedback suggested that the questionnaire was too long and exhausting by the time they reached the end. Subsequent to this, the questionnaire length was reduced by twenty-four questions, leaving effectively eighty-seven questions which took between ten and twelve minutes to complete. All the questions dropped pertained to Career Anchor Theory (CAT). As articulated in the literature review section above, the Authenticity construct of the Kaleidoscope Career Model (KCM) does cater for career anchors irrespective of which specific anchor(s) drive the individual's career choice. Minor adjustments were made to the flow and the questionnaire got to a point where the respondent easily understood the questions and left with no ambiguity.

The questions and statements on the questionnaire were drawn from previous studies on each of the theories making up the integrated model. Permission to use the questions was secured from relevant authors and referenced appropriately. The scope of questions was assessed to ensure that the questionnaire provided enough data to answer the research questions thereby ensuring content validity. Furthermore, the questions posed actually collected data about what they were intended to measure to a desirable extent therein ensuring construct validity.

The actual detailed questionnaire is provided in Appendix 2 of this compilation. The overall Cronbach alpha of 0.89 shown in table 6 suggests that the survey was generally reliable. The value of 0.89 was determined upon combining all constructs in the survey instrument. A Cronbach alpha value around 0.7 and 0.8 is generally considered good and accepted as showing consistency (Field, 2013). Looking at the Cronbach alpha values in table 7, they are all above 0.88 showing that each construct depicted consistency on its own.

4.7. Data Gathering Process

Having been granted permission by Institutional and Departmental leaders to distribute questionnaires in their work environments, I called their Departments to set appointments with a contact person in each of the identified work environments. With the help of contact persons in each organisation, I handed out hard-copy questionnaires and left the staff to populate and put in a box placed in a central place on the floor. I then left and returned after an hour to collect the completed questionnaires. This approach ensured anonymity of respondents as no one was required to provide any information that could be potentially used to identify the respondent.

In some organisations, my contact people asked me to email them the soft copy of the questionnaire in Microsoft Word format so that they could distribute amongst professionals in their work environments, collect responses and then mail me back each completed questionnaire. Anonymity of respondents was also ensured because I never got to see or know the individual professionals who completed the questionnaires but simply received completed questionnaires from respective contact persons.

Each questionnaire began with an informed consent section to advise the respondent that participation was voluntary and that the respondent was at liberty to withdraw anytime without penalty. Furthermore, the respondents were assured of anonymity of responses. The completed questionnaires in print formed part of the portfolio of evidence for the field work performed.

The responses were collated and variables uniquely coded to allow for quantitative analysis in a statistical package named SAS. The next section covers the data analysis approach.

4.8. Analysis Approach

A multi-method approach to data analysis was adopted to ensure that all research questions got answered. To begin with, demographics were analysed. Frequency tables, counts, bar charts and other visualisations were generated to get some understanding of the distribution of variables of interest by demography. Different methods were employed to tackle each research question respectively as explained below. Thematic analysis was performed to scrutinise and look for emergent themes from the open-ended questions that explored reasons why professionals switched careers. Text analysis was specifically employed to determine phrases and words that surfaced most frequently in responses. The first research question was thus answered this way. T-tests were used for the second research question that sought to understand differences between career switchers and non-switchers. Fisher's exact test of association was used to answer the third and fourth research questions. A classification tree was used to answer the fifth research question which sought to provide typical profiles of the career switcher and non-switcher. Finally, binary logistic regression was run to predict the likelihood of switching career in answering the sixth research question. The defence for employing these analysis methods is provided in the next four paragraphs by discussing reasons as to why each analytical technique was appropriate for a particular research question. Detailed results are presented in the next chapter.

The second research question was answered through independent t-tests. T-tests are appropriate when comparing two groups and they basically compare means of variables of interest in the two groups. T-tests typically assume that values within groups are normally distributed and also that variances of the groups are the same – called homoscedasticity (Field, 2013). Tests for normality and equality of variance were carried out to determine appropriateness of the t-tests.

If we want to see if there is a relationship between two categorical variables, we can use Pearson's chi-square test (Field, 2013). One problem with the chi-square test, however, is that the sampling distribution of the test statistic has an approximate chi-square distribution. The approximation gets better the larger the sample gets. In small samples, however, the approximation is not good enough, rendering significance tests of the chi-square distribution inaccurate. In small-sample situations, Fisher's exact test is appropriate hence employed in testing whether relationships existed between level of education and career switching, and also age-group with career switching. The guide to gauging if sample size is too small is looking at the expected cell frequencies, which when above 5, the sample size is fine to apply the chi-square test but when below 5, then Fisher's exact test becomes appropriate (Field, 2013).

Classification trees are a data-driven method that can be used for both classification (classification tree) and prediction (regression tree) and there is a strong view that among data-driven methods, trees are the most transparent and easy to interpret (Shmueli et al., 2011). When constructing trees, observations are separated into subgroups by creating splits on predictors. Recursive partitioning occurs at every level in building the tree where predictors that split the greatest number of observations are prioritised. This is based on the information gain (entropy) principle where the greatest information gain is viewed as that predictor that maximises splits of observations. The partitioning continues till such time when no more splits are possible and this end state is called the terminal node or leaf of the tree. A leaf typically has one observation hence further splitting impossible. Trees will generate rules that guide in allocating each observation to a particular group in this case the switchers group or the non-switchers group. Rules are easily understandable for example:
If Age < 40 and Salary > $ 50 000 then Class= Switcher. Robustness to outliers and missing data are advantages of trees (Shmueli et al., 2011).

The logistic regression model is used in a variety of fields: whenever a structured model is needed to explain or predict categorical (in particular, binary) outcomes (Shmueli et al., 2011). Logistic regression was used for prediction in the sense that it predicted the probability of a categorical outcome. Following computation of probabilities, the next step was to set a cut-off value of the probabilities such that observations with probabilities above the cut-off value get allocated to one group whilst

those with probabilities below get allocated to another class. The optimal cut-off probability was chosen to maximise overall accuracy of the model.

4.9. Limitations

Given the constrained timeframe within which this research needed to be completed, a cross-sectional study was conducted. However, a longitudinal study would probably yield richer insights as the researcher would track progress and stability of career switchers over a period of time. Also, the research was designed to be predominantly quantitative whereas a mixed approach would potentially be better because subsequent to the exploratory phase, one could then follow up with a quantitative study of factors that particularly emerged dominant in explaining career switching. The mixed approach could cast brighter light in describing and establishing relationships between certain constructs and career switching inclination.

4.10. Assumptions

In carrying out this study, it was assumed that respondents told the truth and provided responses that were an accurate reflection of self.

4.11. Conclusion

Extra care was taken to ensure that the study gets as close as possible to yielding credible outcomes. The design of the measuring instrument, its pretesting, respondent anonymity, and using question-appropriate analytical techniques all contributed to a sound approach in the planning and execution of this empirical work.

5. CHAPTER 5: RESULTS

5.1. Introduction

Whilst the results obtained from this study will be discussed under specific research questions posed in Chapter 3, this chapter begins with looking at high-level aspects of the survey such as the response rate, internal consistency and reliability. Thereafter, descriptive statistics will be presented with special attention to relevant demographic variables. Following descriptive statistics will be correlation analysis and exploratory factor analysis, directly after which results on research questions will be presented.

Neyman & Pearson (1933) asserted that the choice of p-values when doing hypothesis testing should not be fixed but rather be set considering the specific circumstance and context of a statistical test. Whilst a p-value of 5% = 0.05 is used in most applications, there could be other applications, for example critical medical tests, where a stricter level of significance of 1% = 0.01 is imperative to guard against potentially catastrophic outcomes. On the other hand, there could also be applications where tests can be conducted at a 10%=0.10 level of significance. Given this background, all tests will be conducted at a 10%=0.10 level of significance for the purposes of this study. If organisations will have 90% confidence in using the models recommended at the end of this study to guide human resource decisions, the study will have achieved its intended purpose.

In some output tables from the statistical analysis tool used (SAS), there will be “raw variables” and “standardised variables” shown in one table. Whenever such tables are shown, “raw variables” will be used because they are untransformed. Also, if any output table shows a column named “sum”, that column must be ignored because it comes as part of standard SAS output but will not be used for interpreting results.

5.2. Response Rate

Of the 170 questionnaires distributed, 120 were completed representing a response rate of 70%. Of the 120 completed, one was spoilt and the other two were poorly populated and discarded effectively leaving 117 (68%) available for analysis. A response rate of 68% was good to work with given the limited timeframe within which the data had to be collected.

5.3. Survey Reliability and Consistency

All the Likert-scale questions and constructs used in this study were inherited from previous studies where consistency was proven. This gave a good start in ensuring consistency. However, in order to validate and ensure consistency of the measuring instrument for the purposes of this specific study, Cronbach alphas were computed for each construct taking into account sub-questions tied to each construct. The overall (combined) survey Cronbach alpha value of 0.89 is shown in table 6 below. Cronbach alpha values for each construct are shown in table 7 below including information on how the Cronbach alpha value would change if a specific construct (variable) was excluded.

Table 6: Cronbach coefficient alpha for career switching survey

Cronbach Coefficient Alpha	
Variables	**Alpha**
Raw	0.894389
Standardized	0.909700

Table 7: Cronbach coefficient alpha with deleted variable

Cronbach Coefficient Alpha with Deleted Variable				
	Raw Variables		Standardized Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
CAREER_SWTICH	0.053164	0.897490	0.042575	0.916376
authenticity	0.556980	0.888344	0.544141	0.905564
balance	0.551019	0.888590	0.547137	0.905497
challenge	0.605713	0.887636	0.651038	0.903151
self_efficacy	0.460872	0.891007	0.506227	0.906411
pers_goals	0.540773	0.888936	0.524075	0.906013
outcome_expectations	0.651370	0.885484	0.614215	0.903986
interests	0.545037	0.890114	0.477648	0.907045
contextual_support	0.452260	0.891970	0.403310	0.908684
contextual_barriers	0.334771	0.896757	0.291532	0.911113
Concern	0.546935	0.888794	0.574142	0.904891
Control	0.576240	0.888503	0.623904	0.903767
Curiosity	0.617623	0.887553	0.674999	0.902604
Confidence	0.552132	0.889377	0.604738	0.904201
Self_dir_career_mgmt	0.493816	0.890592	0.538688	0.905686
values_driven	0.512543	0.889587	0.546181	0.905518
Boundaryless_mindset	0.554031	0.888698	0.603129	0.904237
Org_mobility_prev	0.003897	0.904478	0.015205	0.916942
kaleidoscope_measure	0.794055	0.883909	0.789638	0.899963
social_cognitive	0.798680	0.882844	0.707601	0.901858
career_adapt	0.742601	0.886493	0.798681	0.899753
career_attitude	0.683114	0.888423	0.723891	0.901483

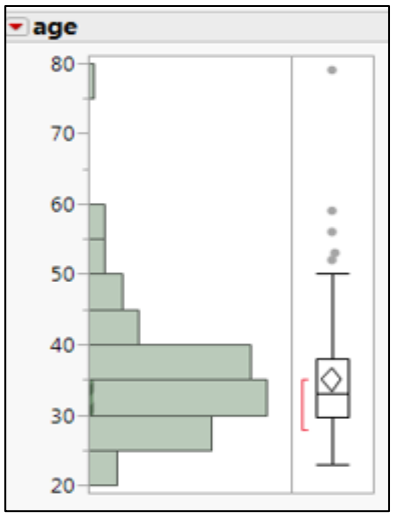
A Cronbach alpha value around 0.7 and 0.8 is generally considered good and accepted as showing consistency (Field, 2013). The overall Cronbach alpha of 0.89 shown in table 6 suggests that the survey was generally reliable. The value of 0.89 was determined taking into account all constructs in the survey instrument. Looking at the alpha values in table 7, they are all above 0.8 and deleting any of the variables would not hugely improve the Cronbach alpha value hence no need to exclude any variable. It can therefore be concluded that there was consistency in the survey instrument.

5.4. Descriptive Statistics

5.4.1. Age

Whilst the median age of the respondents was 33 years, the upper and lower quartile age were 38 and 29 years respectively. Over half of the respondents were between the age of 29 and 38 years representing professionals with sufficient work experience to have known and decided whether or not to switch careers. Below is the distribution of age in years across respondents.

Figure 2: The distribution of age across survey respondents.

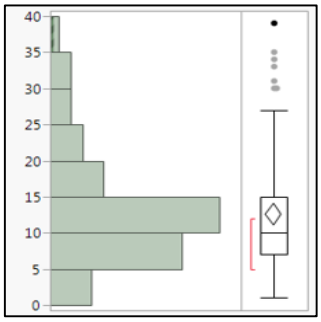


Quantiles		
100.0%	maximum	79
99.5%		79
97.5%		59
90.0%		46
75.0%	quartile	38
50.0%	median	33
25.0%	quartile	29.75
10.0%		26
2.5%		23
0.5%		23
0.0%	minimum	23

5.4.2. Work Experience

The median number of years of professional work experience was 10 years.

Figure 3: Work experience among respondents.

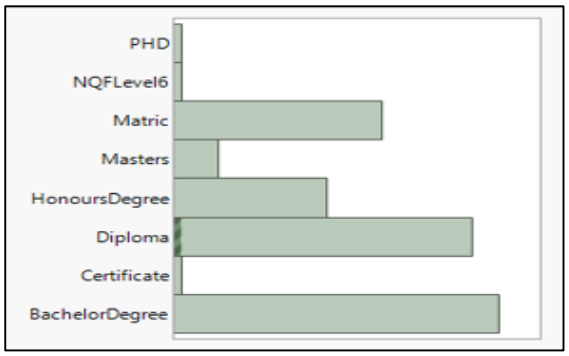


Quantiles		
100.0%	maximum	39
99.5%		39
97.5%		34.075
90.0%		25
75.0%	quartile	15
50.0%	median	10
25.0%	quartile	7
10.0%		5
2.5%		1.925
0.5%		1
0.0%	minimum	1

5.4.3. Level of Education

More than 75% of respondents had either a Diploma, Bachelor's Degree, Honours, Masters or PhD and had professional training and experience in a defined career.

Figure 4: Level of education among respondents



Frequencies

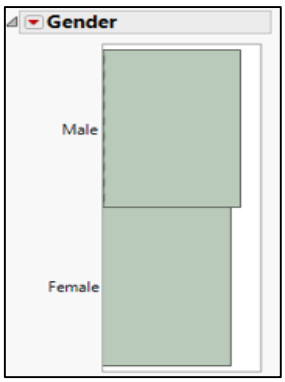
Level	Count	Prob
BachelorDegree	36	0.30769
Certificate	1	0.00855
Diploma	33	0.28205
HonoursDegree	17	0.14530
Masters	5	0.04274
Matric	23	0.19658
NQFLevel6	1	0.00855
PHD	1	0.00855
Total	117	1.00000

N Missing 0
8 Levels

5.4.4. Gender

Whilst Gender was included as a control variable to compare career switchers and non-switchers, it was interesting to note that there was a fairly even split between male and female respondents with males constituting 52% and females 48%. In light of this, it will not be unreasonable to generalise findings from this study to professionals irrespective of their gender. Figure 5 below shows the gender split.

Figure 5: Gender distribution among respondents.



Frequencies

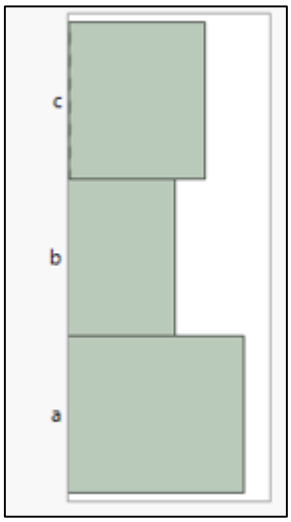
Level	Count	Prob
Female	55	0.48246
Male	59	0.51754
Total	114	1.00000

N Missing 3
2 Levels

5.4.5. Respondent Categories

Even though this study focused on comparing career switchers and non-switchers, a question was posed to those who did not change career to indicate whether or not they were open to change. Whilst this could add insights as to why despite being open to career change some professionals do not change, this study focused on a distinction based on the actual event of career change having happened or not. Whilst 42% of respondents did change career, 32% did not change career and were not open to change, whilst the other 26% did not change career but open to change.

Figure 6: Respondent categories.



Frequencies

Level	Count	Prob
a	49	0.41880
b	30	0.25641
c	38	0.32479
Total	117	1.00000

N Missing 0
3 Levels

Level	Group Represented
a	Changed career
b	Did not change career and open to change
c	Did not change career and not open to change

Since the actual event of career change was used to distinguish between the two groups, categories **b** and **c** were combined and labelled non-switcher whilst category **a** represented career switcher. A binary variable was thus created and formed the basis on which various analytical methods were employed to answer research questions.

5.5. Correlations

5.5.1. Correlations at Career Development Model (theory) Level

Tables 8 and 9 below show correlations between measurement-scales of the four prominent theories that formed part of the integrated theoretical framework used in this survey. Correlations are compared between the career-switcher group and the non-switcher group.

Table 8: Career Switchers

Pearson Correlation Coefficients
Prob > |r| under H0: Rho=0
Number of Observations

	kaleidoscope_measure	social_cognitive	career_adapt	career_attitude
kaleidoscope_measure	1.00000 49	0.53222 <.0001 49	0.61706 <.0001 49	0.47269 0.0008 47
social_cognitive	0.53222 <.0001 49	1.00000 49	0.16262 0.2642 49	0.11424 0.4445 47
career_adapt	0.61706 <.0001 49	0.16262 0.2642 49	1.00000 49	0.62834 <.0001 47
career_attitude	0.47269 0.0008 47	0.11424 0.4445 47	0.62834 <.0001 47	1.00000 47

Table 9: Non-Switchers

Pearson Correlation Coefficients, N = 68
Prob > |r| under H0: Rho=0

	kaleidoscope_measure	social_cognitive	career_adapt	career_attitude
kaleidoscope_measure	1.00000	0.54188 <.0001	0.62754 <.0001	0.58498 <.0001
social_cognitive	0.54188 <.0001	1.00000	0.49641 <.0001	0.43586 0.0002
career_adapt	0.62754 <.0001	0.49641 <.0001	1.00000	0.61312 <.0001
career_attitude	0.58498 <.0001	0.43586 0.0002	0.61312 <.0001	1.00000

In Pearson's Correlation test, the hypotheses are specified as follows:

H_0: There is zero (no) correlation between measures.

H_1: There is significant correlation between measures.

At a 10% level of significance (p-value = 0.10), Table 9 above shows that amongst non-switchers, there is significant positive correlation between all measures of the major theories as shown by the p-values much lower than 0.10 leading to rejection of the null hypothesis in favour of the alternative. On the other hand, Table 8 shows that amongst switchers, social cognitive career theory measures are positively correlated to kaleidoscope measures (0.53222) having a p-value less than 0.0001. The social cognitive career theory measures, however, are not correlated with career adaptability and protean and boundaryless attitude measures as shown in p-values of 0.2642 and 0.4445 – both much higher than 0.10.

Wherever strong positive correlations exist, one could consider dropping one scale and keeping another one since the two will be moving in the same direction. One could, for example, exclude kaleidoscope measures and keep social cognitive career measures alongside career adaptability and attitude scales. This is consistent with best practice when building models where parsimony is encouraged more-so when there is limited data available (Shmueli et al., 2011). Since correlations were initially determined at the level of the major theories, the effect of aggregating constructs may have resulted in obscurity regarding the exact nature of correlations thereby necessitating the need to study correlations at a more granular level namely the individual construct level. The next section takes a closer look at correlations at the construct level.

5.5.2. Correlations at Individual Construct Level

Table 10 below shows correlations between individual constructs drawn from the integrated theoretical model.

Table 10: Correlations between individual constructs

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	career swtich	1.00	-0.07	-0.04	0.03	0.08	0.15	0.06	0.06	0.13	0.04	0.03	0.03	0.03	-0.08	-0.04	-0.06	0.14	-0.04
2	authenticity	-0.07	1.00	0.37	0.37	0.29	0.32	0.42	0.42	0.28	0.22	0.38	0.32	0.34	0.40	0.20	0.20	0.35	-0.02
3	balance	-0.04	0.37	1.00	0.38	0.23	0.26	0.43	0.39	0.18	0.18	0.24	0.33	0.38	0.36	0.23	0.39	0.31	0.11
4	challenge	0.03	0.37	0.38	1.00	0.48	0.37	0.28	0.18	0.22	-0.02	0.49	0.48	0.60	0.46	0.42	0.35	0.56	0.09
5	self_efficacy	0.08	0.29	0.23	0.48	1.00	0.28	0.28	0.11	0.03	0.02	0.31	0.47	0.36	0.55	0.39	0.34	0.37	-0.03
6	pers_goals	0.15	0.32	0.26	0.37	0.28	1.00	0.53	0.55	0.38	0.14	0.36	0.29	0.34	0.21	0.28	0.27	0.28	-0.24
7	outcome_expectations	0.06	0.42	0.43	0.28	0.28	0.53	1.00	0.61	0.43	0.35	0.30	0.37	0.30	0.32	0.27	0.36	0.27	-0.05
8	interests	0.06	0.42	0.39	0.18	0.11	0.55	0.61	1.00	0.54	0.48	0.20	0.13	0.18	0.09	0.10	0.14	0.21	-0.08
9	contextual_support	0.13	0.28	0.18	0.22	0.03	0.38	0.43	0.54	1.00	0.38	0.20	0.11	0.14	0.08	0.15	0.19	0.13	0.09
10	contextual_barriers	0.04	0.22	0.18	-0.02	0.02	0.14	0.35	0.48	0.38	1.00	0.22	0.07	0.05	0.05	0.07	0.11	0.12	0.13
11	Concern	0.03	0.38	0.24	0.49	0.31	0.36	0.30	0.20	0.20	0.22	1.00	0.46	0.59	0.41	0.30	0.27	0.37	-0.01
12	Control	0.03	0.32	0.33	0.48	0.47	0.29	0.37	0.13	0.11	0.07	0.46	1.00	0.55	0.59	0.43	0.47	0.39	0.05
13	Curiosity	0.03	0.34	0.38	0.60	0.36	0.34	0.30	0.18	0.14	0.05	0.59	0.55	1.00	0.60	0.49	0.45	0.58	-0.03
14	Confidence	-0.08	0.40	0.36	0.46	0.55	0.21	0.32	0.09	0.08	0.05	0.41	0.59	0.60	1.00	0.45	0.40	0.49	-0.03
15	Self_dir_career_mgmt	-0.04	0.20	0.23	0.42	0.39	0.28	0.27	0.10	0.15	0.07	0.30	0.43	0.49	0.45	1.00	0.60	0.44	-0.02
16	values_driven	-0.06	0.20	0.39	0.35	0.34	0.27	0.36	0.14	0.19	0.11	0.27	0.47	0.45	0.40	0.60	1.00	0.36	-0.04
17	Boundaryless_mindset	0.14	0.35	0.31	0.56	0.37	0.28	0.27	0.21	0.13	0.12	0.37	0.39	0.58	0.49	0.44	0.36	1.00	-0.05
18	Org_mobility_prev	-0.04	-0.02	0.11	0.09	-0.03	-0.24	-0.05	-0.08	0.09	0.13	-0.01	0.05	-0.03	-0.03	-0.02	-0.04	-0.05	1.00

In Table 10, some constructs show considerable positive correlations for example the correlation between outcome expectations and interests (0.61). One of these two variables could be excluded from the model to avoid multi-collinearity.

Seeing that there were instances of positive correlation between numerous pairs of constructs, data reduction through factor analysis was deemed necessary. However, before doing factor analysis, it was necessary to gauge appropriateness thereof by carrying out Bartlett's test of sphericity. Section 5.6 begins with testing the appropriateness of factor analysis as required.

5.6. Data Reduction

5.6.1. Bartlett's Test of Sphericity

Table 11: Output for Bartlett's test of Sphericity

Significance Tests Based on 112 Observations			
Test	DF	Chi-Square	Pr > ChiSq
H0: No common factors	136	683,1948	<.0001
HA: At least one common factor			

A p-value less than 0.0001 rendered the test significant leading to the rejection of the null hypothesis and supporting appropriateness of performing factor analysis.

5.6.2. Factor Analysis

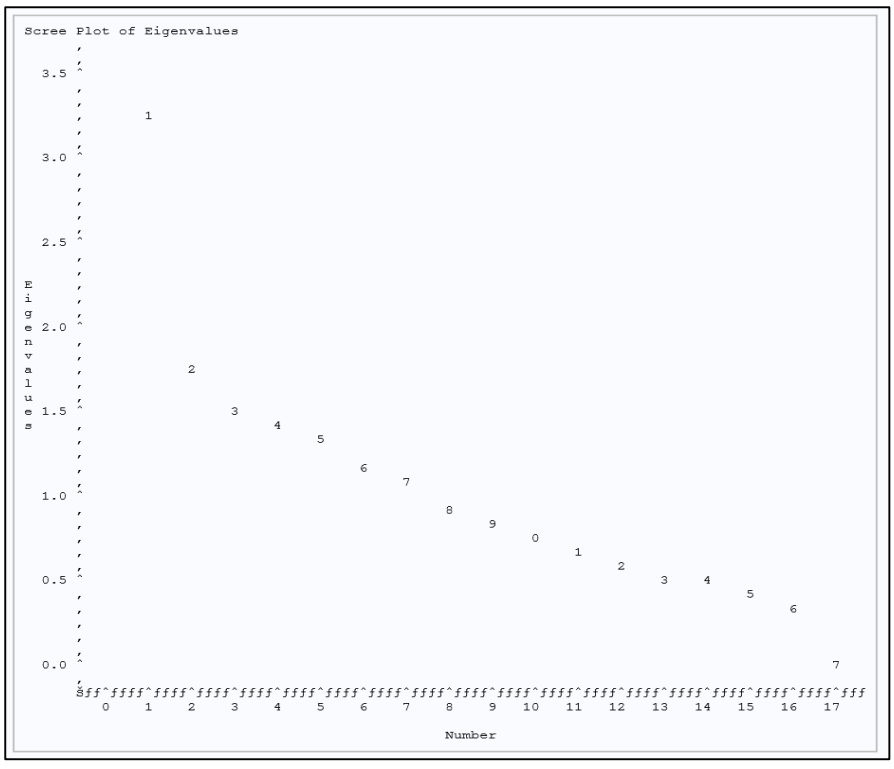
Exploratory factor analysis was conducted. The eigenvalues and cumulative variance explained were analysed. Also, the mean scores were partialised to remove the effect of high scorers. Considering that respondents came from different cultural backgrounds as indicated by race, it could be a possibility that some people could be more conservative, pessimistic or optimistic when compared to others. Moderating the effects of extreme scorers was done by partialising means scores. Finally, varimax factor rotation was particularly carried out because varimax is widely accepted and used in practice. Using the eigenvalue 1 rule (Williams, Brown & Onsman, 2012), seven factors were extracted. Each of the selected factors had an eigenvalue above 1 and the factors jointly explained 68% of the variance. Table 12 below shows eigenvalues and cumulative variance explained for only those factors that were selected.

Table 12: Eigenvalues and cumulative variance for selected factors

Eigenvalues of the Correlation Matrix: Total = 17 Average = 1				
	Eigenvalue	Difference	Proportion	Cumulative
1	3.26781578	1.53653435	0.1922	0.1922
2	1.73128143	0.18961548	0.1018	0.2941
3	1.54166595	0.08747917	0.0907	0.3848
4	1.45418678	0.15337815	0.0855	0.4703
5	1.30080863	0.12134964	0.0765	0.5468
6	1.17945898	0.10756829	0.0694	0.6162
7	1.07189069	0.19446339	0.0631	0.6792

The scree plot of eigenvalues is shown in Figure 7 below.

Figure 7: Scree plot of eigenvalues.



Only those factors where the eigenvalue was above 1 were extracted. As shown in Figure 7, seven factors met this criterion and thus were looked at further.

The varimax rotated factor pattern is shown in table 13 below. Varimax was specifically chosen as it is commonly used in practice and widely accepted as a credible method.

Table 13: Rotated factor pattern

Rotated Factor Pattern							
	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6	Factor7
Confidence	0.79521	-0.08657	-0.04157	-0.09409	-0.02725	0.03676	-0.05950
interests	-0.48404	-0.32862	0.46480	-0.34561	-0.20662	-0.01684	0.11665
contextual_support	-0.62805	-0.10577	0.06923	-0.27675	-0.17819	-0.07077	-0.13900
Self_dir_career_mgmt	0.01747	0.78751	0.06868	0.08888	-0.07909	0.15224	-0.18237
values_driven	0.08349	0.76940	0.05841	-0.13554	-0.11170	-0.11107	0.15789
authenticity	0.03928	-0.58411	0.22254	-0.06199	-0.14065	0.07956	0.09064
pers_goals	-0.38050	-0.06334	0.71142	0.11059	-0.01685	-0.14674	-0.11557
outcome_expectations	-0.22573	-0.14214	0.48131	-0.30892	-0.25086	-0.27247	0.12579
Org_mobility_prev	-0.27270	-0.07791	-0.82112	0.04523	-0.15439	-0.20010	0.02639
challenge	-0.10378	-0.12916	-0.08698	0.84507	0.02683	0.08727	-0.15499
contextual_barriers	-0.36839	-0.17629	-0.05050	-0.68787	-0.05515	0.00527	-0.20597
Concern	-0.08156	-0.23119	-0.00779	0.02692	0.72927	-0.24295	-0.29394
Curiosity	0.31670	0.10711	0.03390	0.13961	0.68927	0.19473	0.00428
self_efficacy	0.43646	-0.05963	0.03770	0.25188	-0.46179	-0.12476	-0.43002
Boundaryless_mindset	0.13749	-0.01193	-0.01591	0.10946	0.02809	0.84368	-0.15842
Control	0.49299	0.11174	-0.01204	0.06148	0.04944	-0.55413	-0.22824
balance	0.00812	-0.12907	-0.03314	0.01407	-0.16654	-0.10327	0.87741

High factor loadings were identified and used to name the seven factors.

Table 14: Factor names.

Factor ID	High loading variables	Factor Name
Factor 1	Confidence (0.795) Contextual Support (-0.628)	Confident believers in self who do not thrive of contextual support.
Factor 2	Self-directed career management (0.788) Values-driven (0.769)	Consider societal values in directing own career.
Factor 3	Personal goals (0.711) Org mobility preference (-0.821)	Driven by own personal ambitions but with low desire to move organisations (Ambitious).
Factor 4	Challenge (0.845) Contextual barriers (-0.688)	Driven by taking on challenges and not deterred by obstacles (Challengers).
Factor 5	Concern (0.729) Curiosity (0.689)	Inquisitive Planners
Factor 6	Boundaryless mindset (0.844) Control (-0.554)	Explorers
Factor 7	Balance (0.877)	Balance-seekers

The factors suggested that we could potentially reduce the number of predictors from 17 constructs to just 7 factors in the analysis of career switching behaviour. More on the above-identified factors will be discussed in section 5.7.6 when discussing logistic regression to predict likelihood of career switching.

5.7. Results for research questions posed in chapter 3

5.7.1. Why do professionals switch careers?

It was interesting to note that 90% of career switchers indicated that the decision to switch career was voluntary whereas only 10% switched career involuntarily. Since the aim of this study was to better-understand voluntary career switching, the sample was appropriate.

Whilst thematic analysis can be conducted in various ways, text analytics techniques were specifically used to identify common themes that emerged from the respondents. The number of times that words and phrases were mentioned was determined and frequency distribution summarised in table 15 below.

Table 15: Top reasons for switching career.

Reason	% of all Switchers	Example quote (phrase)
Better challenge	12/49 = 24%	"*I wanted a challenge*"
Better opportunity	10/49 = 20%	"*Next best opportunity available*"
Career growth	8/49 = 16%	"*To seek growth and development as well as better remuneration*"

Looking at Table 15, it is evident that 60% of respondents who switched careers attributed career switch to the top 3 reasons being better challenge, better opportunity and career growth.

5.7.2. How do career switchers differ from non-switchers?

Due to the differing types of variables considered in exploring differences between career switchers and non-switchers, different tests were conducted to suit the type of variable under consideration. Whilst some variables were categorical (class), others were continuous. Though all continuous variables were tested, the categorical variables considered were age-group and level of education (qualification) since these variables spoke to the third and fourth research questions. All the Likert-scale variables became converted to continuous scales by averaging scores of sub-questions per construct and were tested for significant differences between career switchers and non-switchers. SAS output from tests conducted on personal goals and self-efficacy is reported on below. It is important to note that the independent t-tests performed assume equality of variances of the two groups (switchers and non-switchers), as well as normality of the continuous variable whose difference in the means is under study. In this case, the normality of personal goals and self-efficacy was tested to validate appropriateness of tests performed. In the output tables below, the binary Target variable is labelled 1 for career switchers and 0 for non-switchers. We look at personal goals first.

Table 16: Summary statistics for variable personal goals.

Variable: pers_goals

Target	N	Mean	Std Dev	Std Err	Minimum	Maximum
0	68	3.6691	1.3090	0.1587	1.0000	5.0000
1	49	4.0204	0.7770	0.1110	2.5000	5.0000
Diff (1-2)		-0.3513	1.1182	0.2095		

Target	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
0		3.6691	3.3523	3.9860	1.3090	1.1200	1.5753
1		4.0204	3.7972	4.2436	0.7770	0.6480	0.9707
Diff (1-2)	Pooled	-0.3513	-0.7663	0.0637	1.1182	0.9904	1.2840
Diff (1-2)	Satterthwaite	-0.3513	-0.7351	0.0325			

Table 17: Test for equality of variances for personal goals.

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folded F	67	48	2.84	0.0002

The following hypotheses were tested:

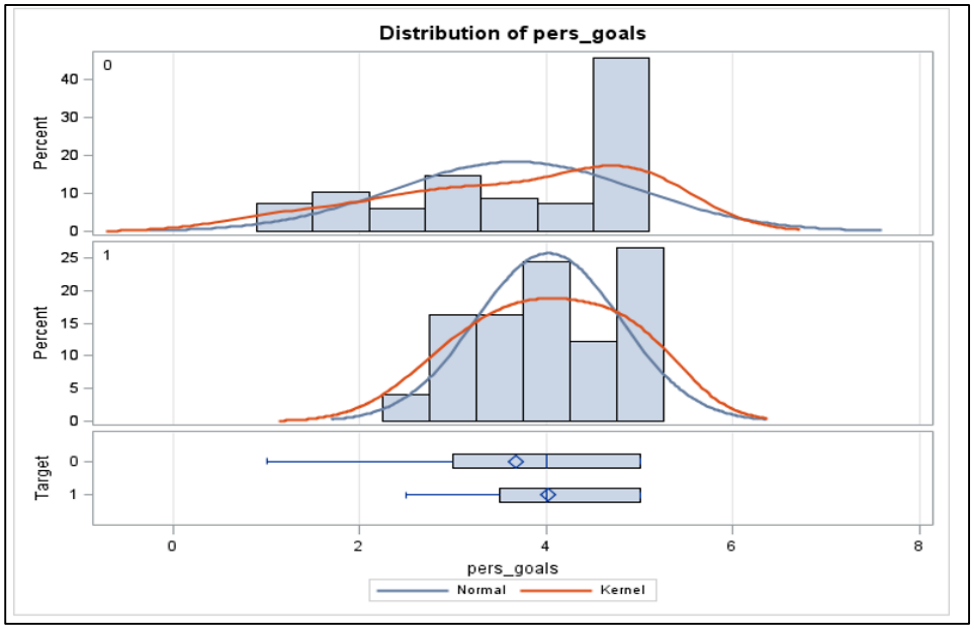
H_0: Equal variances between the career switcher and non-switcher groups.
H_1: Unequal variances between the career switcher and non-switcher groups.

Looking at the p-value of 0.0002, we reject the null hypothesis at a 10% level of significance and contend that variances are not equal between the two groups. When variances are unequal, the Satterthwaite method is used to perform t-tests that determine if the means are the same or different between the career switcher and non-switcher groups. If variances are equal, the Pooled method is used instead. The table below is the same as table 18 further on and is shown here to clarify implications for the equality or inequality of variances when conducting and interpreting t-tests.

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	115	-1.68	0.0963
Satterthwaite	Unequal	111.37	-1.81	0.0724

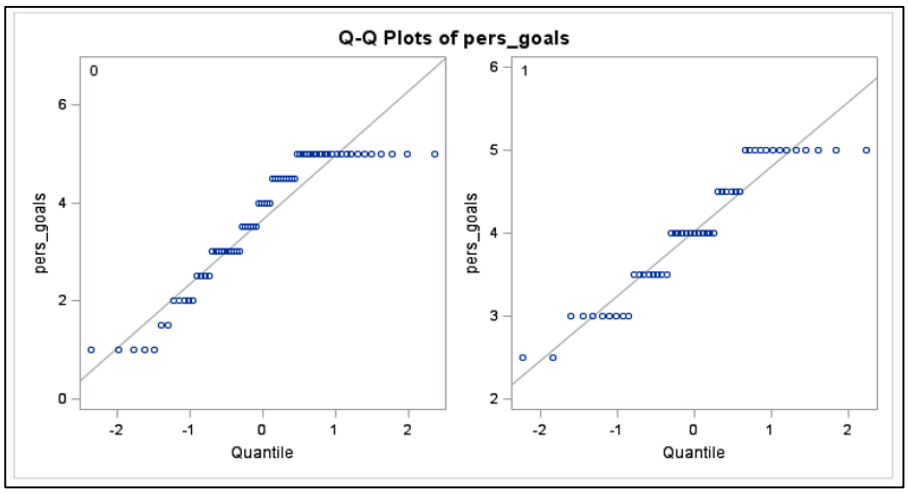
Having tested the equality of variances assumption, the next step tested the assumption of normality in the distribution of the variable personal goals.

Figure 8: Test for normality of the variable personal goals – Distribution plot.



It appeared from Figure 8 that the distribution of personal goals among career switchers was closer to a normal distribution compared to that of the non-switchers. The distribution among non-switchers is approximately normal nonetheless.

Figure 9: Test for normality of the variable personal goals – QQ plots.



When interpreting QQ plots, if a straight line can be plotted through the observations that is evidence for normality (Hogg & Tanis, 1977). In both plots for career switchers and non-switchers shown in Figure 9, straight plots fitted well thereby supporting the assumption of normality. It can therefore be concluded that the independent t tests to investigate differences between career switchers and non-switchers were appropriate.

In the final step, differences in the means between the two groups were tested and the t-test results shown in table 18 below.

Table 18: Testing for differences in means for personal goals (t-test).

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	115	-1.68	0.0963
Satterthwaite	Unequal	111.37	-1.81	0.0724

The following hypotheses were tested:

H_0: No difference in means between the career switcher and non-switcher groups.
H_1: Different means between the career switcher and non-switcher groups.

The t-test was performed at a 10% level of significance and a p-value of 0.0724 used since the variances were shown to be unequal above. It was concluded that there were significant differences in personal goal means between career switchers and non-switchers.

We look at self-efficacy second.

Table 19: Summary statistics for variable self-efficacy.

Variable: self_efficacy

Target	N	Mean	Std Dev	Std Err	Minimum	Maximum
0	68	4.3015	0.7877	0.0955	2.0000	5.0000
1	49	4.4082	0.5560	0.0794	3.0000	5.0000
Diff (1-2)		-0.1067	0.7004	0.1312		

Target	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
0		4.3015	4.1108	4.4921	0.7877	0.6740	0.9479
1		4.4082	4.2485	4.5679	0.5560	0.4636	0.6946
Diff (1-2)	Pooled	-0.1067	-0.3666	0.1533	0.7004	0.6204	0.8042
Diff (1-2)	Satterthwaite	-0.1067	-0.3528	0.1394			

Table 20: Test for equality of variances for self-efficacy.

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folded F	67	48	2.01	0.0122

The following hypotheses were tested:

H_0: Equal variances between the career switcher and non-switcher groups.
H_1: Unequal variances between the career switcher and non-switcher groups.

Looking at the p-value of 0.0122, we reject the null hypothesis at a 10% level of significance and contend that variances are not equal between the two groups. As mentioned above, the Satterthwaite method was used to perform t-tests that determine if the means are the same or different between the career switcher and non-switcher groups because the variances were unequal. The table below is the same as table 21 further on and is shown here to clarify implications for the equality or inequality of variances when conducting and interpreting t-tests.

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	115	-0.81	0.4179
Satterthwaite	Unequal	114.96	-0.86	0.3922

Having tested the equality of variances assumption, the next step tested the assumption of normality in the distribution of the variable self-efficacy.

Figure 10: Test for normality of the variable self-efficacy – Distribution plot.

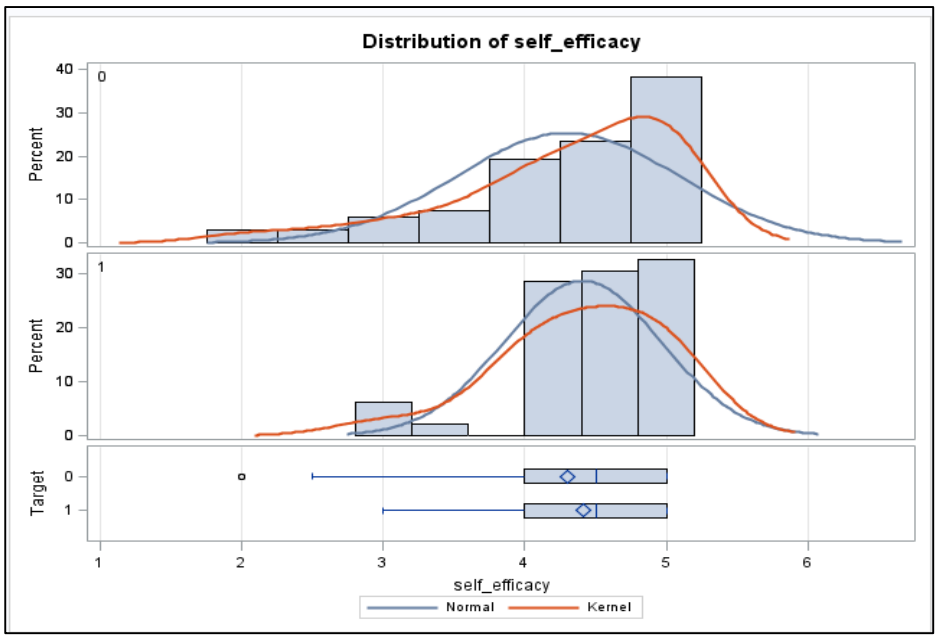
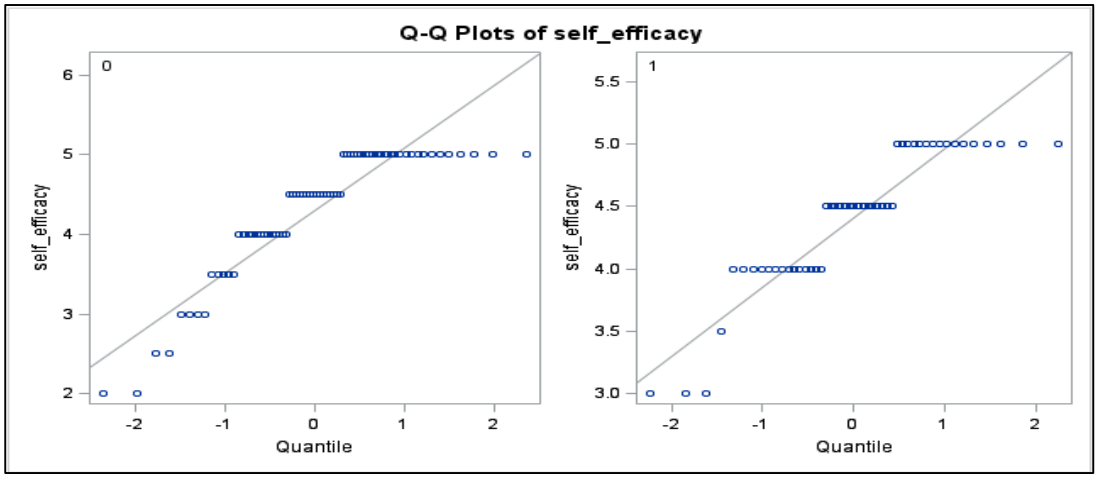


Figure 11: Test for normality of the variable self-efficacy – QQ plots.



Looking at figure 11, it can be seen normality generally holds for both the switcher and non-switcher groups with the distribution of non-switchers being slightly skewed and that of switchers resembling the normal distribution better. The QQ plots in figure 11 support the normality assumption as explained similarly as when we looked at personal goals earlier on above.

Finally, differences in the means between career switchers and non-switchers were tested and the t-test results shown in table 21 below.

Table 21: Testing for differences in means for self-efficacy (t-test).

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	115	-0.81	0.4179
Satterthwaite	Unequal	114.96	-0.86	0.3922

The following hypotheses were tested:

H_0: No difference in means between the career switcher and non-switcher groups.
H_1: Different means between the career switcher and non-switcher groups.

At a 10% level of significance, a p-value of 0.3922 rendered the test insignificant. The null hypothesis was not rejected implying that there was no significant difference in means between switcher and non-switcher groups for self-efficacy.

5.7.3. What is the relationship between level of education and career switching?

Given the small amount of data collected, conducting a Chi-square test posed risk on the validity of the results when investigating the relationship between class variables on the binary (target) variable of switching or not switching career. Instead, Fisher's Exact Test of association between class variables and the target variable was conducted as it is recommended in situations where small amounts of data are available. (Field, 2013). Next, results from the test of association between level of education (qualification) and career switching are presented.

The following hypotheses were tested:

H_0: There is no association between qualification and career switching.
H_1: There is significant association between qualification and career switching.

Table 22: Levels of qualification considered in Fisher's exact test.

Frequency Percent Row Pct Col Pct	Table of Target by Qualification						
		Qualification					
Target		1	2	3	4	5	Total
0		5 4.27 7.35 29.41	24 20.51 35.29 60.00	35 29.91 51.47 64.81	2 1.71 2.94 50.00	2 1.71 2.94 100.00	68 58.12
1		12 10.26 24.49 70.59	16 13.68 32.65 40.00	19 16.24 38.78 35.19	2 1.71 4.08 50.00	0 0.00 0.00 0.00	49 41.88
Total		17 14.53	40 34.19	54 46.15	4 3.42	2 1.71	117 100.00

Level	Qualification
1	Matric with some professional training
2	Diploma
3	Bachelor's Degree and Honours
4	Masters
5	PhD

Inappropriateness of the chi-square test is shown in table 23 below also.

Table 23: Inappropriateness of the Chi-square test.

Statistics for Table of Target by Qualification

Statistic	DF	Value	Prob
Chi-Square	4	8.3580	0.0793
Likelihood Ratio Chi-Square	4	9.0668	0.0595
Mantel-Haenszel Chi-Square	1	5.2808	0.0216
Phi Coefficient		0.2673	
Contingency Coefficient		0.2582	
Cramer's V		0.2673	

WARNING: 40% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Table 24: Output from Fisher's exact test of association.

Fisher's Exact Test	
Table Probability (P)	1.629E-04
Pr <= P	0.0655

At a 10% level of significance, a p-value of 0.0655 shows that there was significant association between qualification and career switching hence we reject the null hypothesis. The variable qualification (level of education) is associated with career switching.

5.7.4. What is the relationship between age group and career switching?

Age-group was tested for association with career switching using Fisher's exact test of association. The set of outputs below tests the relationship between age-group and career switching. The hypotheses tested are stated below:

H_0: There is no association between age-group and career switching.
H_1: There is significant association between age-group and career switching.

Table 25: Age-groups considered in Fisher's exact test.

Frequency Percent Row Pct Col Pct	Table of Target by AGE_GROUP						
	AGE_GROUP						
Target	Missing	[00 - 25)	[25 - 30)	[30 - 35)	[35 - 45)	[45 - @@)	Total
0	5 4.27 7.35 100.00	6 5.13 8.82 100.00	14 11.97 20.59 70.00	16 13.68 23.53 51.61	20 17.09 29.41 52.63	7 5.98 10.29 41.18	68 58.12
1	0 0.00 0.00 0.00	0 0.00 0.00 0.00	6 5.13 12.24 30.00	15 12.82 30.61 48.39	18 15.38 36.73 47.37	10 8.55 20.41 58.82	49 41.88
Total	5 4.27	6 5.13	20 17.09	31 26.50	38 32.48	17 14.53	117 100.00

A chi-square test was also conducted to demonstrate its inappropriateness given the small amount of data collected in this survey. Table 26 below shows SAS output for the Chi-square test performed and includes a warning making validity doubtful. A label on 0 depicts non-switchers and a 1 depicts career switchers on the Target.

Table 26: Inappropriateness of the Chi-square test.

Statistics for Table of Target by AGE_GROUP

Statistic	DF	Value	Prob
Chi-Square	5	12.1006	0.0334
Likelihood Ratio Chi-Square	5	16.1111	0.0065
Mantel-Haenszel Chi-Square	1	9.9552	0.0016
Phi Coefficient		0.3216	
Contingency Coefficient		0.3062	
Cramer's V		0.3216	

WARNING: 33% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Table 27: Output from Fisher's exact test of association.

Fisher's Exact Test	
Table Probability (P)	2.891E-06
Pr <= P	0.0300

At a 10% level of significance, a p-value of 0.03 shows that there was significant association between age-group and career switching. Even at a 5% level of significance the same result will hold. The variable age-group can potentially be useful in explaining differences between career switchers and non-switchers.

Similarly, Fisher's test was conducted on work experience and a p-value of 0.0923 rejected the null hypothesis that there was no significant association between work experience and career switching. Work experience, therefore is associated with career switching at a 10% level of significance and can potentially be used in probing career switching and non-switching.

5.7.5. Are the profiles of career switchers and non-switchers the same?

Classification trees are a data mining technique considered powerful when profiling respondents. They are a visual tool that can help in quickly understanding profiles especially differences between groups of interest.

Whilst previous tests compared career switchers and non-switchers on the construct level, the classification tree approach is looking at a more granular level of the individual sub-questions. Employing principles of entropy and information gain at each split, this approach was good because it cut across all constructs and selected only those variables that maximised differences between the two groups regardless of which construct the variable (sub-question) came from. From all the sub-questions on the Likert-scale measurement scales, 7 variables appeared most significant in maximising differences between career switchers and non-switchers. The 8th variable was demographic and named age. Looking at selected variables as a collective constituted the profiling element of classification trees. A profile is a collection of attributes that typically characterise an identifiable entity or group, in this case career switchers as well as non-switchers being groups of interest.

Figure 12 below shows a classification tree that was fitted to the data to profile career switchers and non-switchers.

Figure 12: Classification tree for profiling career switchers and non-switchers.

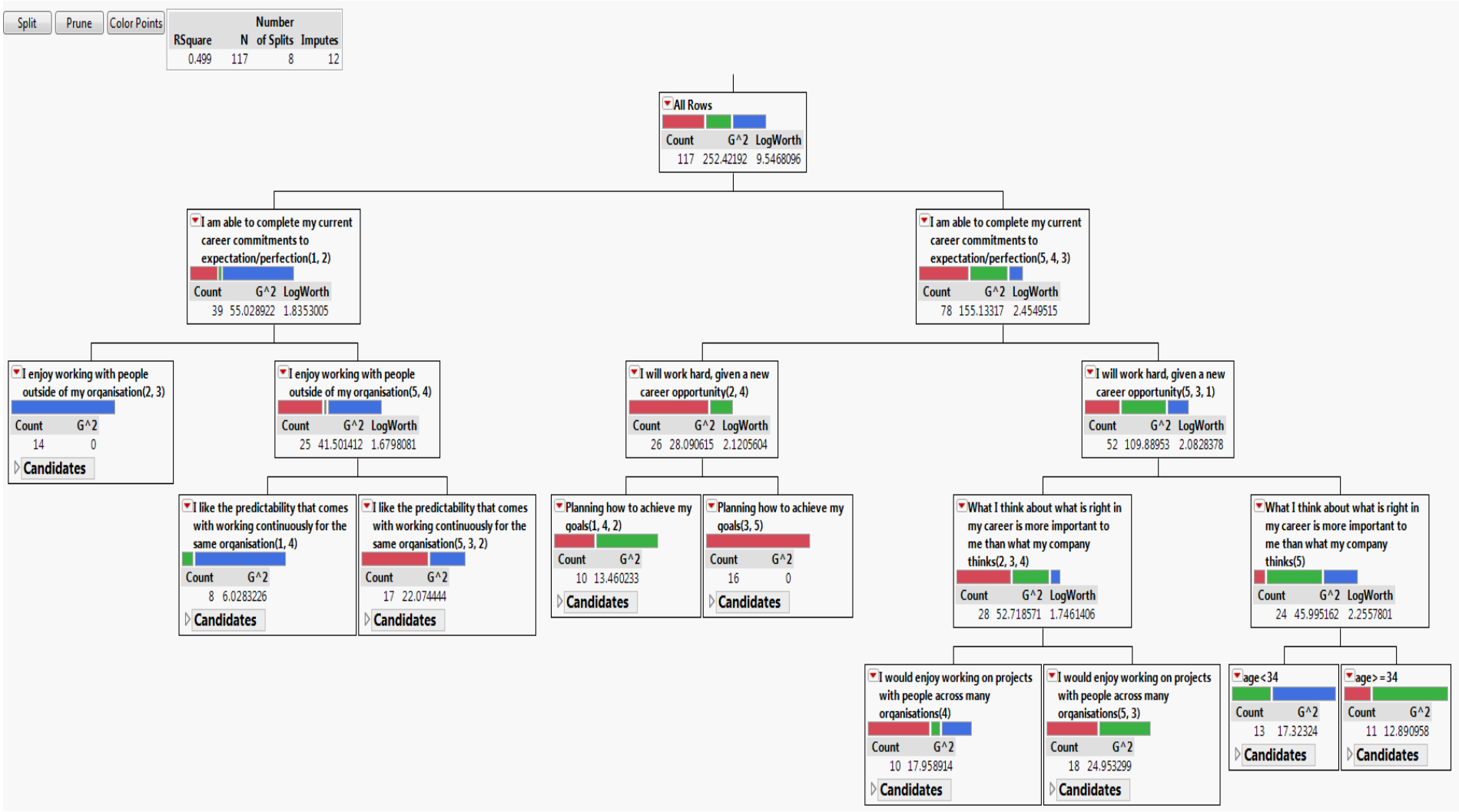


Table 28: Relative importance of variables in profiling switchers & non-switchers.

Column Contributions

Term	Number of Splits	G^2	Portion
I am able to complete my current career commitments to expectation/perfection	1	42.2598242	0.3068
I will work hard, given a new career opportunity	1	17.1530258	0.1245
age	1	15.7809651	0.1146
Planning how to achieve my goals	1	14.6303821	0.1062
I enjoy working with people outside of my organisation	1	13.5275097	0.0982
I like the predictability that comes with working continuously for the same organisation	1	13.3986453	0.0973
What I think about what is right in my career is more important to me than what my company thinks	1	11.1758004	0.0811
I would enjoy working on projects with people across many organisations	1	9.80635795	0.0712

At the root node of the classification tree, the variable ***"I am able to complete my current career commitments to expectation/perfection"*** was used to split the sample into two groups namely switchers and non-switchers. The column named ***"Portion"*** totals 1 (100%) and values show that the contribution that the first split made to the total profiling exercise was almost 31%. The rest of the splits are listed in diminishing order of their contributions to the profiling exercise.

In addition to the actual classification tree and the ranking of splits shown in table 28, a third set of important outputs are rules that explain and guide users on how to interpret the tree and actually use the tree as a tool to classify new cases (observations) based on the values supplied for the 8 variables of interest (splitting criteria). Detailed classification tree rules are provided in Appendix 3.

Figure 13: Performance of the classification tree

Fit Details

Measure	Training	Definition
Entropy RSquare	0.4986	1-Loglike(model)/Loglike(0)
Generalized RSquare	0.7451	(1-(L(0)/L(model))^(2/n))/(1-L(0)^(2/n))
Mean -Log p	0.5409	∑ -Log(ρ[j])/n
RMSE	0.4369	√ ∑(y[j]-ρ[j])²/n
Mean Abs Dev	0.3711	∑ |y[j]-ρ[j]|/n
Misclassification Rate	0.2906	∑ (ρ[j]≠ρMax)/n
N	117	n

Confusion Matrix

Training

Actual Inyourprofessionalhistoryhaveyou	Predicted a	b	c
a	40	8	1
b	9	15	6
c	9	1	28

Information on Respondent Categories

Frequencies

Level	Count	Prob
a	49	0.41880
b	30	0.25641
c	38	0.32479
Total	117	1.00000
N Missing	0	

Level	Group Represented
a	Changed career
b	Did not change career and open to change
c	Did not change career and not open to change

From the model fit details, the misclassification rate is used to assess how well a classification tree model performs in allocating respondents to appropriate categories (Shmueli et al., 2011). The reported misclassification rate of 29% suggests that 71% of the time, the model classifies respondents correctly. Looking at the information on respondent categories, it can be seen that 49 respondents changed career. Looking at the confusion matrix, it can be seen that of the 49 people that changed career, 40 were correctly classified, 8 were classified into a group of respondents that did not change career but open to change whilst only 1 career switcher was incorrectly classified as not having changed career and not open to change.

The misclassification rate and confusion matrix support the assertion that the classification tree performed well and can potentially be used as a tool to guide practitioners make decisions.

5.7.6. Is inclination towards career switching predictable?

Binary logistic regression with forward selection was performed to try and predict likelihood to switch career. The target (response/dependent) variable was career switching where a value of 1 depicted a career switcher and a value of 0 depicted a non-switcher. Two separate logistic regression models were fit and their respective performances compared. The model that performed better was eventually selected. In the first model, the predictors included 17 constructs from the integrated theoretical framework and some few selected demographic variables. In the second model, the predictors were the seven factors extracted from exploratory factor analysis and the same few selected demographic variables used in the first model. The steps followed and output generated from the better-performing model are presented next.

Table 29: Performance of the Likelihood Ratio logistic regression model.

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	57.0596	25	0.0003
Score	37.7695	25	0.0487
Wald	20.6463	25	0.7122

The Likelihood Ratio test yielded a p-value of 0.0003 shown in table 29 above. This is significant even at a 5% and 1% level of significance and more-so at a 10% level of significance on which all tests in this study are assessed.

Table 30 below shows the analysis of effects and Maximum Likelihood estimates. Though the commonly used variable entry and stay criteria is 10%, it was set at 15% for this study. Since the study utilised a small amount of data and the modelling was for something that has a lot of other external factors, there was sound basis to make wider the entry and stay criteria.

Table 30: Analysis of Effects and Maximum Likelihood Estimates.

Type 3 Analysis of Effects			
Effect	DF	Wald Chi-Square	Pr > ChiSq
self_efficacy	1	2.5136	0.1129
pers_goals	1	1.1056	0.2930
Curiosity	1	2.8856	0.0894
Confidence	1	10.5990	0.0011
Self_dir_career_mgmt	1	3.0894	0.0788
values_driven	1	2.9138	0.0878
Boundaryless_mindset	1	5.0120	0.0252

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	-2.8667	66.7561	0.0018	0.9657
self_efficacy		1	0.8754	0.5521	2.5136	0.1129
pers_goals		1	0.3697	0.3516	1.1056	0.2930
Curiosity		1	1.0502	0.6183	2.8856	0.0894
Confidence		1	-2.7864	0.8559	10.5990	0.0011
Self_dir_career_mgmt		1	-1.1421	0.6498	3.0894	0.0788
values_driven		1	-0.7638	0.4475	2.9138	0.0878
Boundaryless_mindset		1	1.4765	0.6595	5.0120	0.0252

Had 10% been used, both self-efficacy and personal goals would not have been included. At 15 %, however, self-efficacy becomes included but personal goals is still not included. More on this will be discussed in Chapter 6.

Odds Ratio Estimates are shown in table 31 below.

Table 31: Odds Ratio Estimates.

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
self_efficacy	2.400	0.813	7.082
pers_goals	1.447	0.727	2.883
Curiosity	2.858	0.851	9.602
Confidence	0.062	0.012	0.330
Self_dir_career_mgmt	0.319	0.089	1.140
values_driven	0.466	0.194	1.120
Boundaryless_mindset	4.378	1.202	15.946

From table 31, it can be seen in the point estimates that someone with a boundaryless mindset is 4 times likely to switch career than one who does not. Similarly, one who is curious is almost 3 times likely to switch career than one who is not.

Table 32: Association of Predicted Probabilities and Observed Responses.

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	87.9	Somers' D	0.758
Percent Discordant	12.1	Gamma	0.758
Percent Tied	0.0	Tau-a	0.372
Pairs	2944	c	0.879

A c-value of 0.879 shows that almost 88% of the variation in career switching was explained by the model. Residual analysis was also done and yielded the results shown in table 33 below.

Table 33: Residual Analysis.

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
11.3475	13	0.5817

The residual chi-square test checks if residuals are random. If random, then the model fit was acceptable. Given a p-value of 0.5817, we do not reject the null hypothesis that residuals were random at a 10% level of significance.

6. CHAPTER 6: DISCUSSION OF RESULTS

6.1. Introduction

Brief commentary on high-level aspects of the study opens up the discussion of results obtained. The commentary covers the profile of respondents to this survey, internal consistency and reliability of the survey, as well as touching on external validity of the findings from the study. Thereafter, findings addressing each research question will be discussed. In some cases, contradictions and alignment between various test results will be highlighted and the recommended choice of results stated alongside rationale in support of the chosen result. Relevance of the integrative approach to career switching studies will be discussed next, following which a reflection on adaptability in relation to career switching will be tackled. The discussion of results will end with two complementary models being proposed which can be useful artefacts for human resource practitioners to use in guiding various decisions.

It is important to note that various tests were conducted on three levels in this study. As shown on the questionnaire in Appendix 2, the integrated theoretical framework comprised several otherwise standalone career development models (CDM) namely Social Cognitive Career Theory (SCCT), Kaleidoscope Career Model (KCM), Adaptability, as well as Protean and Boundaryless attitude scales. Each of the models consists of constructs and each construct, in turn, comprises several sub-questions. Statistical tests were thus conducted at the model, construct, and sub-question levels; findings from which are expounded in subsequent sections.

6.2. High-level aspects of the study and alignment to objectives

Ninety percent of the respondents that switched career said that their career change was voluntary implying that they personally initiated and followed through the decision to change career (Allen et al., 2010). This was consistent with the aims of the study to focus on voluntary career change. As the descriptive statistics in Chapter 5 showed, there was an even split between male and female respondents.

Furthermore, respondents represented professionals from multiple industries eliminating bias towards specific industries or professions. The median age of the respondents was 33 years and the median work experience was 10 years. It is not unreasonable to assert that in a ten-year working period, one would have been around enough to know whether or not there is motivation to stay in one career or switch to another. The majority of respondents had some form of tertiary qualification and professional training in a defined field of work. The gender and multi-industry attributes make it easier to generalise results regardless of gender or profession thereby promoting external validity. Consistency of the measuring instrument was ascertained though Cronbach alpha values measured for each construct and the overall Cronbach alpha value of 0.89 further strengthened the case for a generally reliable survey. Cronbach alpha values around 0.7 and 0.8 are commonly acceptable to signify consistency (Field, 2013). Given this background, sections 6.3 onward will delve into specific findings that address research questions.

In the literature review in Chapter 2, we encountered that different career theories tend to use different terminology whilst referring to the same things. Awareness of such realities could be helpful when crafting and fine-tuning an integrated theoretical framework for career change. Whilst personal judgement identified some potential redundancies, correlation analysis further helped to quantitatively establish the existence, direction, and strengths of such relationships. From Table 8 above, it was observed that amongst career switchers, social cognitive career theory measures were positively correlated to kaleidoscope measures (0.53222) having a p-value less than 0.0001. The social cognitive career theory measures, however, were not correlated with career adaptability and protean and boundaryless attitude measures as shown in p-values of 0.2642 and 0.4445 – both much higher than 0.10. Given that correlations were initially determined at the level of the major theories; the effect of aggregating constructs may have resulted in obscurity regarding the exact nature of correlations thereby necessitating the need to study correlations at a more granular level namely the individual construct level.

Studying correlations at the construct level exposed the need for exploratory factor analysis that led to the identification of seven factors shown and named in table 14 above (Chapter 5). The extent to which the identified factors were useful will be discussed in section 6.8 with special focus on prediction.

The factors will also be revisited in section 6.9 when discussing the relevance of the integrative approach to career-related studies and in this particular study career switching. At this stage, it suffices to mention that the key factors that emerged were named to include inquisitive planners, explorers, balance-seekers, challengers, the ambitious, values-driven own career managers, as well as the confident believers in self who did not thrive on any contextual supports.

6.3. Why do professionals switch careers?

As mentioned in Chapter 2, early literature attributed career change to four broad categories of reasons namely factors to do with the intended new career, factors to do with the present career from which one wants to move away, obstacles to change, and also factors to do with the individual preferences and dislikes (Neapolitan, 1980). The availability or scarcity of alternatives also played a part in encouraging or limiting the move (Rhodes & Doering, 1983). This study found that professionals switch careers chiefly for three reasons namely better challenge, better opportunity and, career growth (see table 15 above). About a quarter of career switchers cited the pursuit of greater challenge as the driver to having changed career. Twenty percent mentioned the need for a better opportunity, whilst sixteen percent of career switchers sought career growth.

The quest to move into a more challenging career had more to do with the individual's own desire to stretch self and do what was deemed fulfilling from a complexity point of view. This had nothing to do with characteristics of the work environment in the previous nor new career but purely the individual's realisation of having conquered the previous content and work requirements and consequently slipping into the boredom of routine. Though the term "better" implied comparison, the comparison was with respect to the actual content of the work between a previous occupation and a new occupation. This finding was consistent with early literature which purported that one of the three categories of factors driving career change were personal preferences and dislikes. The preference in this case was the desire to stretch oneself, whereas the dislike was to get drawn into a routine characterised by tasks deemed easy to accomplish.

Since twenty percent of respondents cited the pursuit of better opportunity, that warrants some attention. Again, use of the term “better” implied comparison. What was not clear, however, was what exactly was meant by “better”. Could better have meant more flexible working hours, could it have meant more paid leave, could it have meant greater salary or something else? This illustrates the limit posed on a questionnaire when collecting data because the researcher cannot probe or ask follow-up questions when the questionnaire is self-administered and not completed together with the researcher helping a respondent. Even though the meaning of the term “better” was not clarified, one thing that stood clear was that career change was triggered by attributes of the new career that were deemed more attractive to the career switcher compared to the previous career. Such attributes could also be called pull factors that lured the career switcher to move from a previous occupation to a new occupation. This is also consistent with early literature that people changed careers in part due to factors to do with the intended new career (Neapolitan, 1980).

Career growth was the third most frequently cited reason for career switching. An example quote that emerged out of this category of switchers was;

> “*To seek growth and development as well as better remuneration*”.

It was the first time that the notion of extrinsic rewards such as salary surfaced. The above quote suggests that remuneration is only one aspect of drivers of career change but other forms of growth and development are also instrumental to stirring change. It is important to note that in the context of career change, growth and development can be subjective as it may mean different things to different individuals. It may also deviate from commonly accepted measures of growth and development such as moving into a managerial role. Since career change is characterised by moving into a new profession or occupation that is not part of a typical career progression (Rhodes & Doering, 1983), moving into a managerial role would most probably be part of a normal career progression and not qualify as career change. The subjectivity in this lands it to personal preferences too.

Looking at respondent categories in Figure 6 of Chapter 5, we saw that whilst 26% of all respondents did not change career, they were open to change. It would be interesting to establish why those professionals did not change career despite being open to change. Could there be barriers or supports to influence that position? Neapolitan (1980) contended that even in the presence of push and pull factors as well as personal desire to switch, career change does not always happen. He asserted that obstacles to change can influence whether or not change actually happens. More recently; Lent, Hackett & Brown (2000) acknowledged the role of contextual supports and barriers when making career choices. When considering moving from one occupation to another, choice is involved. Certain choices may be subject to constraints, diminishing the likelihood to switch career, whilst in some instances favourable factors may be present and make career switching easier. This study did not focus on obstacles to change and that could be worthwhile as follow-up studies.

6.4. How do career switchers differ from non-switchers?

Personal goals emerged the most important attribute to distinguish between career switchers and non-switchers. A goal was defined as the determination to engage in a particular activity or to effect a particular future outcome (Lent, Brown & Hackett, 1994). Furthermore, goals are said to have a self-motivating quality by linking self-satisfaction to goal attainment and to the enactment of behaviour that meets internally-set standards. From this definition, it can be deduced that personal goals emanate from within the individual and are driven by the conviction that achieving a set goal confers personal fulfilment. The presence of such conviction and burning desire to attain a set end state is what sets career switchers apart from non-switchers. The environment plays a less influential role towards career switching than the individual's own aspirations. Intent is central to switching career and where there is no intent the individual is unlikely to change career.

Whilst the t-test of independence supported the conclusion that significant differences in personal goals existed between career switchers and non-switchers, the logistic regression model showed personal goals as insignificant in predicting likelihood to switch career. It is interesting, however, that the odds ratio estimate of 1.447 from the logistic regression, suggested greater likelihood of someone with clear personal goals to switch career compared to someone who did not have clearly defined personal career goals. On the other hand, the classification tree picked up a sub-question that fell under the personal goals construct as one of the variables on which a meaningful split between career switchers and non-switchers occurred. Results from the t-tests and the classification tree align whereas the logistic regression model suggests otherwise. Since logistic regression was done at a construct level, the effect of averaging Likert scale scores to get a score for each construct could have impacted results negatively when predicting likelihood to switch career. Averaging the Likert scale assumes that there score options are equidistant on a scale of 1 to 5, which is rarely the case (Jamieson, 2004). The classification tree would not have been affected by averaging scores per construct because it identified splits at a sub-question level.

A sub-question tied to the personal goals construct which was one of the classification tree splits read; *"**I will work hard, given a new career opportunity***". A respondent who answered this statement in the affirmative already indicated predisposition and openness to change career compared to a respondent who answered otherwise. Furthermore, given that voluntary career change is a direct consequence of personal intent, it was not surprising that the personal goals construct reflected significant differences between career switchers and non-switchers. It is not unreasonable to contend and conclude that indeed there were significant differences in personal goals between career switchers and non-switchers. Besides personal goals, no other construct in the integrated theoretical framework manifested significant differences between career switchers and non-switchers.

6.5. What is the relationship between level of education and career switching?

Since the level of education (qualification) was a categorical variable and the target response variable was binary, Fisher's exact test of association was employed to probe association (Field, 2013). The test showed that at a 10% level of significance, there was association between the level of education and career switching. Even though association was proven, it did not imply causality and the exact nature of that association warrants further investigation. The extent to which knowledge of this association is useful or useless in explaining career switching is not known and was out of scope for this study. Whilst association was proven, it did not imply adequacy to explain differences between career switchers and non-switchers but could be potentially used to generate useful insights on career switching.

There is mixed evidence for the relationship between level of education and switching career. Carless & Arnup, (2011) asserted that there were two opposing schools of thought on the effect of education on career switching. One view says higher investments in education accrue in greater career stability. This view is backed by human capital theory which purports that higher levels of education increase the individual's opportunity cost of leaving his or her career and tend to keep him or her in that same career longer than less educated counterparts. The other view argues that individuals with higher levels of education gain skills and experience on the job thereby raising the propensity to change careers whereas less educated individuals have a narrower range of work-related skills which limits prospects to change careers (Carless & Arnup, 2011).

This study did not go beyond ascertaining association hence can neither validate nor refute either view. There is greater inclination towards the former view, however, because pursuit of a particular field to Master's and PhD levels not only reflects interest in a particular field, but also considerable immersion and significant investments in time and money which would make it harder to depart from the set career path in consideration for alternatives. One drawback in this study was that respondents with PhDs were not as many as lower levels of educational attainment to make sound comparison.

This trend could be indicative of society in general where the ratio of PhD holders to other qualification holders could be relatively small. It could be argued that the sample was representative of societal population in general in light of relative scarcity of PhD holders.

6.6. What is the relationship between age-group and career switching?

Fisher's test of association revealed that there was association between age-group and career switching. Compared to the level of education, age-group seemed to manifest stronger association with career switching because the test was significant at a 5% level of significance. Given the significance of the association, the exact form of the relationship deserves attention. This result corroborated literature which says that as individuals get older, they become less likely to change careers and that most career switchers do change occupations whilst under the age of 30. Younger people are less likely to have made substantial investments to entrench themselves in a particular occupation compared to older people. More often than not, younger people are characterised by more flexible living and working arrangements increasing their career switching disposition (Carless & Arnup, 2011). It was interesting to note that the median age of respondents was 33 years as mentioned earlier on above.

Though it is not unreasonable to assert that switching career becomes progressively harder as age increases to a point beyond which it is almost impractical, this still remains an assumption to be tested empirically as it was out of scope and not explicitly required of this study. Proving association was sufficient to confirm existence of a relationship. One would, for example become less likely to switch career on getting closer to retirement age compared to a young professional who is about 5 years into a defined career. In the same light, employers would not be keen to hire a human resource quite advanced in age in a new career where the resource needs to learn new skills altogether.

6.7. Are the profiles of career switchers and non-switchers the same?

The classification tree shown in Figure 12 above is not just an easy-to-understand visual profiling tool, but also comes with rules that guide the user on how to allocate respondents to the switcher or non-switcher groups (Shmueli et al., 2011). Since the tree splits career switchers and non-switchers based on 8 variables, the rules will tell the user that if a respondent scores certain values on each of the eight variables in specified combinations, then the respondent will fall into the switcher or non-switcher group with specified probability. To illustrate how tree rules are used, an extract of tree rules has been placed in Appendix 4 accompanied by an explanation on how to apply the rules.

It was interesting to note that age was the only demographic variable added to the 7 variables that were all part of the integrated theoretical framework. This is not surprising considering the strong association between age and career switching deduced from Fisher's exact test of association discussed earlier on. Furthermore, the three most important variables jointly contributed over 54% of the profiling power. Equally interesting was the fact that the selected variables came from constructs drawn out of multiple career development models strengthening the case for an integrative approach to shape career development literature. The constructs were self-efficacy, personal goals, concern, boundaryless mindset, organisational mobility preference and values-driven career management.

The comprehensive typical profile of a career switcher and that of a non-switcher are provided in the full tree rules in Appendix 3. Classification trees can be a powerful and visual way to profile career switchers and non-switchers. As shown in Chapter 5, the power of the classification tree was measured through the misclassification rate which was below 30% constituting a better way to classify respondents compared to gut feel (Shmueli et al., 2011).

6.8. Is inclination towards career switching predictable?

As mentioned in Chapter 5, two logistic regression models were developed but only the better-performing one reported on in detail. Logistic regression produced a model that explained over 87% of the variation in career switching and was appealing because it allowed a combination of categorical and continuous predictors to jointly and proportionately tell a story around career switching. The analysis of effects and parameter estimates also helped in understanding how each construct related with the binary response variable namely career switching (Field, 2013). Furthermore, odds ratios helped in understanding that people with a boundaryless mindset, high curiosity, defined personal goals, and self-efficacy were more likely to switch careers compared to people who did not have such attributes.

Whilst it would have been preferable for the logistic regression model to be built on the most-granular predictors (sub-questions), this was restricted by limitations in the data when we consider that there were 87 questions in the questionnaire and only a 117 respondents provided data fit for analysis. The general rule of thumb is to have an event per variable (EPV) ratio of 10:1 implying that if we measured 87 variables, we would need a minimum of 870 respondents (Courvoisier, Combescure, Agoritsas, Gayet-Ageron & Perneger (2011). Performing logistic regression at the construct level made sense in light of practical considerations.

A few insights can be drawn from the logistic regression model that was discarded. As mentioned in Chapter 5, the predictors in the discarded model comprised the seven factors drawn from the factor analysis in addition to the demographic variables. The discarded model explained about 67% of the variation in career switching which was 20% lower than the chosen predictive model. It was interesting to note that only seven factors explained 67% of total variation in the target variable whereas seventeen constructs explained 87%. Even though the predictive model with factors as predictors was not chosen, knowledge of the factors themselves could help management to better-understand what is valued or considered important by employees. Whilst the classification tree yielded profiles for typical career switchers and non-switchers, the seven factors represented profiles of professionals in general.

The likelihood to switch career can therefore be predicted by building a binary logistic regression model where the target variable is career switching labelled 1 for switchers and 0 for non-switchers. Logistic regression is frequently used and appropriate for prediction (Shmueli et al., 2011). If the data available is small, then performing the regression with constructs and demographic variables as predictors would be the way to go. Should larger numbers of respondents be available as time progresses, the regression could potentially be performed with sub-questions as predictors instead of constructs. Taking the regression model to the most granular level of predictors could eliminate the averaging of Likert scores which in this study was done to allocate one score to each construct despite the contentious debate on the appropriateness of treating Likert scale responses as interval scales (Jamieson, 2004).

6.9. Relevance of the Integrative Approach

Several tests performed in this study produced evidence to advance the case for an integrative approach when shaping career development theory and guiding practice. Factor analysis, the classification tree, and the logistic regression model all showed the integrative element as explained below.

Looking at the variables (sub-questions) which the classification tree used to split respondents into groups, it can be seen that the sub-questions were tied to various constructs, which in turn, were tied to multiple career development theories. Table 34 below shows the relationships between sub-questions, constructs and career development theories. The sub-questions span across Social Cognitive Career Theory, Adaptability, Protean and Boundaryless career attitudes. Had all sub-questions belonged to one theory, it could have been contested that just one theory was sufficient to explain career switching. Evidently, these theories traverse the traditional and contemporary theories. Ricardo et al. (2014) concurred with this approach arguing that integrative research allows for cumulative perspectives and lenses to be taken into account, and not neglecting nor despising competing approaches when deemed not to fit celebrated frameworks. They proposed an approach that avoided the risk of reification as a result of neglecting scholarship that did not fit enough with the widely celebrated views (Ricardo, David & Dany, 2014).

Table 34: Sub-questions, constructs and major theories used in the classification tree.

Sub-question	Related Construct	Related Carer Development Theory
I am able to complete my current career commitments to expectation/ perfection	Self-efficacy	**Social Cognitive Career Theory**
I will work hard, given a new career opportunity	Personal goals	Social Cognitive Career Theory
Planning how to achieve my goals	Concern	**Career Adaptability**
I enjoy working with people outside of my organisation	Boundaryless mindset	Boundaryless Career Attitudes
I like the predictability that comes with working with working continuously for the same organisation	Organisational mobility preference	**Boundaryless Career Attitudes**
What I think about what is right in my career is more important to me than what my company thinks	Values-driven career management	**Protean Career Attitudes**
I would enjoy working on projects with people across many organisations	Boundaryless mindset	Boundaryless Career Attitudes

Similarly, variables (constructs) that were used in the logistic regression model were drawn from multiple major theories.

Table 35 below illustrates the relationships between constructs and major theories that they were drawn from.

Table 35: Constructs and major theories used in the logistic regression model.

Construct (variable)	Related Carer Development Theory
Curiosity	**Career Adaptability**
Confidence	Career Adaptability
Self-Efficacy	**Social Cognitive Career Theory**
Personal Goals	Social Cognitive Career Theory
Values-driven career management	**Protean Career Attitudes**
Self-directed career management	Protean Career Attitudes
Boundaryless mindset	**Boundaryless Career Attitudes**

Had all constructs (variables) in the logistic regression model belonged to one major theory, there would be reasonable grounds to argue that one career theory sufficed to explain a phenomenon in career development which in this case is career switching. It can be seen from table 35 that predictors were drawn from distinct theories namely Career Adaptability, Social Cognitive Career, Protean and Boundaryless Career attitudes. In both the logistic regression and classification tree approaches, it has been thus shown that an integrative approach is appropriate.

It was interesting to note that the Kaleidoscope Career Model (KCM) did not contribute any constructs (variables) to the logistic regression and classification tree models. This could be explained in terms of the correlation analysis shown in table 8 above where it was mentioned that Social Cognitive Career Theory (SCCT) measures were correlated with Kaleidoscope Career Model (KCM) measures but not correlated with career adaptability, protean and boundaryless career attitude measures. Since SCCT and KCM measures were correlated, one of them was dropped from the regression model to avoid multi-collinearity (Gujarati, 2012).

The factor analysis mentioned in Chapter 5 is yet another piece of evidence in support of the integrative approach. Table 36 shown below is an extension of table 14 shown above in that it links the seven factors to major career theories through the high-loading constructs in each factor. The cut-off value to determine high-loading factors is arbitrarily set depending on context (DiStefano, Zhu & Mindrila, 2009). In this study, the top two loading constructs were chosen provided they were above 0.5 regardless of positive or negative sign.

Table 36: Linking factors to major career theories.

Factor ID	High loading variables (constructs)	Factor Name	Related Career Development Theories
Factor 1	Confidence (0.795) Contextual Support (-0.628)	Confident believers in self who do not thrive on contextual support.	Adaptability, SCCT
Factor 2	Self-directed career management (0.788) Values-driven (0.769)	Consider own values in directing own career. (Value-driven)	**Protean**
Factor 3	Personal goals (0.711) Org mobility preference (-0.821)	Driven by own personal ambitions but with low desire to move organisations (Ambitious).	**SCCT**, Boundaryless
Factor 4	Challenge (0.845) Contextual barriers (-0.688)	Driven by taking on challenges and not deterred by obstacles (Challengers).	Kaleidoscope, SCCT
Factor 5	Concern (0.729) Curiosity (0.689)	Inquisitive Planners	**Adaptability**
Factor 6	Boundaryless mindset (0.844) Control (-0.554)	Explorers	**Boundaryless**, Adaptability
Factor 7	Balance (0.877)	Balance-seekers	**Kaleidoscope**

Factors 1, 3, 4 and 6 draw on more than one career theory. Furthermore, the seven factors jointly span across SCCT, KCM, Adaptability, Protean and Boundaryless career theories thereby strengthening the case for an integrative approach. No single career theory can be tied to all the seven factors and that weakens the contention for a single-theory approach when explaining career phenomena. In the next section, we take a closer look at adaptability in relation to career change.

6.10. Reflecting on Adaptability in relation to Career Change

Adaptability was defined as 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). Central to adaptability is the virtue and ability to change with ease to fit new circumstances. Understanding adaptability was argued to be very important especially for providers of vocational guidance. Assertions were made in Chapter 2 that both human resource researchers and practitioners now need to shift from trait theories that sought to match individual characteristics with professions, and move towards approaches that emphasise adaptability to align with the 21st century workplace (Bassot, 2012). Part of this study looked at how adaptability relates with career switching and the results thereof are presented below.

Consistent with recent literature, adaptability was measured on four constructs namely concern, control, curiosity and confidence (Safiah & Noordin, 2013). Each of the four constructs is defined in section 2.8 above. Whilst the various tests performed and models built produced insights on concern, curiosity and confidence, nothing came out regarding control. The predictive logistic regression model was the most useful in understanding how adaptability relates with career switching since it addressed two constructs namely curiosity and confidence. The classification tree was also helpful as it touched on one sub-question that was tied to the construct named concern.

At a 10% level of significance, both curiosity and confidence came out significant in the logistic regression model with p-values of 0.0894 and 0.0011 respectively. The odds ratio figure of 2.858 suggested that a curious individual was almost three times more likely to switch career than an individual who was not curious. This is perhaps because a curious individual is constantly searching in other environments and likely to come across attractive destination occupations compared to a less curious person. An odds ratio estimate of 0.062 suggested that a confident individual was less likely to switch career compared to an individual who was not confident. Also, this is not surprising because it could suggest that the insecurity of someone who lacks confidence could trigger the need to look elsewhere and end up changing occupation altogether.

On one of its splits, the classification tree used the sub-question "***planning how to achieve my goals***" to split career switchers from non-switchers suggesting that there was considerable difference between career switchers and non-switchers on that specific sub-question which was linked to the construct named concern. This finding was consistent with the assertion that adaptability involves planning attitudes, exploration of the environment and self, as well as informed decision-making encountered in chapter 2 above (Savickas, 1997). Leveraging insights from both the logistic regression model and the classification tree could help in developing better understanding of adaptability in relation to career switching.

When the t-test was run on each of the four constructs (concern, control, curiosity and confidence), none of the constructs showed significant difference between career switchers and non-switchers. Given the logistic regression suggested that people who were more curious and less confident had greater tendency to switch careers, it may appear at first sight that the t-test results seem to contradict the logistic regression findings but they do not. Instead, the tendency to switch career could be there as suggested by the logistic regression model but perhaps not strong enough to imply significant difference. The t-tests look for significant difference, not just difference. If a test is not significant, it does not imply that there are no differences. Differences could be present but just that they would not be considered significant. Results from the logistic regression, t-tests, and the classification tree can all be useful and complementary in probing how adaptability relates with career change.

The result that t-tests did not detect significant differences between career switchers and non-switchers warrants closer reflection on why it turned out that way. The ability to adjust to new settings or conditions can impact career switchers and non-switchers alike, making the impact of adaptability on tendency to switch career debatable. Since career switching involves moving from one occupation to another, it is often associated with a change in work environment and conditions as well. Consider a scenario where a professional's present work environment undergoes change, for example, restructuring. If a professional has high adaptability, that professional will most probably be comfortable with the changes and new settings and likely stay on. In a separate scenario, if good-enough an opportunity arises outside that professional's present occupation, the professional with high adaptability would most probably be comfortable to take on the new occupation and let go the present occupation.

The two scenarios described above illustrate that high adaptability can influence the decision to switch or not switch occupation either way depending on other stimuli which can be internal or external to the present organisation or occupation. This probably explains why t-tests could not yield significant differences between career switchers and non-switchers based on adaptability. One key message that comes strongly though is that having high adaptability is a desirable attribute as it positions a professional well to cope with changing conditions in both the existing occupation or when venturing into new territory.

6.11. Proposed Models

Whilst answering specific research questions, this study led to the creation of two artefacts which can be used by human resource practitioners to guide various decisions in the workplace. Artefacts include the classification tree and the predictive model.

6.11.1. Classification Tree

In Chapter 5, key tenets of the classification tree were presented. In section 6.7, a brief explanation on how to interpret classification tree rules and allocating respondents to the switcher or non-switcher groups was provided. The full list of classification tree rules is provided in Appendix 3. Though interpreting classification tree rules may appear a complex task for people not used to them, the good news is that many software tools generate classification trees, the applicable rules, and allocate observations into appropriate classes for the user automatically. All that needs to be done is to feed the 8 variables into the tool and run a classification tree model and use the results to support decision-making. The tool will be quick to administer and obtain results.

6.11.2. Predictive Model (Binary Logistic Regression)

Using maximum likelihood parameter estimates from table 30 in Chapter 5, the logistic regression model can be stated as an equation shown below.

Y = -2.8667 + 0.8754 (self-efficacy) + 0.3697 (personal goals) + 1.0502 (curiosity)
– 2.7864 (confidence) – 1.1421 (self-directed career management)
– 0.7638 (values-driven career management) + 1.4765 (boundaryless mindset).

Where Y is the probability of switching career and the parentheses represent scores on each of the named constructs as determined by averaging the Likert scale scores of associated sub-questions. Scores will be between 1 and 5 and on an interval scale.

7. CHAPTER 7: CONCLUSION

7.1. Contributions of the current study to literature

The literature review in chapter 2 went to depths discussing various career development theories and how career theory evolved through the passage of time. The move from traditional career theories to contemporary, and more recently, to next-generation career theories happened predominantly in a chronological fashion. In earlier years, and more often than not, researchers tended to leverage one theory in studying a career-related phenomenon of interest, for example, how Holland's congruence theory was used to explain career switching (Donohue, 2006). Within the last five years, there have been growing voices advocating an integrative approach to studying careers. Proponents of an integrative approach argued that the approach would help restore the cumulative wealth of knowledge gathered throughout history as opposed to an approach of discrediting one theory in favour of another one, whilst losing the richness that may characterise some aspects of the discarded theory (Ricardo et al., 2014).

Even though there has been increasing realisation of the importance of an integrative approach, no practical guidelines have been put forward with regards to how exactly the integration should happen. In light of many career development theories, researchers battle to establish where one starts in determining which theories to integrate and which ones not to include. This study has contributed to current literature in a number of ways as expounded below.

First, the study rationalised and looked for similarities and differences between various career theories. As mentioned before, there have been cases where different terminology was used to describe the same things in different theories. Informed by discernment and personal judgment of the researcher, zooming into the specifics of such redundancies helped in proposing the integrated theoretical framework on which the empirical study was underpinned.

Whilst the personally-discerned integrated theoretical framework provided a starting point in guiding empirical studies, correlation analysis of the measurement scales of major theories contributing to the integrated framework further uncovered commonalities in measures and led to refining the framework. This saw the exclusion of kaleidoscope measures that were shown to be correlated with social cognitive career theory measures.

Second, the empirical leg of this study illustrated and provided a practical approach to harnessing the integrative approach in addressing career-related questions. Furthermore, a number of potentially useful insights were generated. Whilst the seven factors did little to distinguish between career switchers and non-switchers, they cast light onto better-understanding the 21st century employee. The high-loading positive constructs informed the researcher about the preferences and motivations of the 21st century professional whereas the high-loading negative constructs indicated what the 21st century professional is not and does not prefer for each factor. Factor 4, for example, ranked 0.845 on the challenge construct and ranked -0.688 on contextual barriers construct describing a group of professionals who like to take on new challenges and are not deterred by obstacles. Such knowledge could help employers to treat employees appropriately in accordance with the factor they belong to instead of a one-size-fits-all approach to treating and motivating staff.

Third, findings from this study added to the body of knowledge on the subject of career change. As mentioned in Chapter 1 above, the field of career change has received much less attention from researchers compared to the field of job change, and yet both job change and career change pose challenges to employee retention (Carless & Arnup, 2011). In answering the research questions listed in Chapter 3, the study enriched present understanding of the field of career change. Given that Safiah & Noordin (2013) described the career adaptability construct as the 4 Cs namely career concern, career control, career curiosity and career confidence, this study put to test the 4Cs assertion. Despite not manifesting significant differences between career switchers and non-switchers, a closer look at adaptability shed light on confidence and curiosity as the more important constructs in understanding career change, followed by concern, and with control having no relevance.

Fourth, findings from the empirical leg of the study provided a mechanism to validate and/or refute earlier literature or findings on career change. There was a possibility that reasons for changing career in 1983 could be quite different from reasons for changing career in the 21st century owing to environmental changes like technological advancements, for example (Okhuysen et al., 2015). The top reasons cited for switching career in Chapter 5 validated and ratified earlier literature which broadly attributed career change to factors to do with the individual, the work environment of origin, and also the destination work environment (Neapolitan, 1980).

Finally, the case for an integrative approach to career change study was strengthened. As shown in Chapter 6, no single career theory spanned all the seven factors from the exploratory factor analysis. Also, some of the factors were tied to more than one career theory through high-loading constructs.

7.2. Implications for business practitioners

Business practitioners stand to benefit considerably from the outcomes of this study. Direct beneficiaries include human resource practitioners and providers of vocational guidance. The ways in which various stakeholder groups will benefit are elaborated in subsequent paragraphs.

In chapter 6, we discussed that even though adaptability can influence career switching either way (switch or not switch), high adaptability is advantageous and can be handy in aiding one to adjust to changing circumstances in an existing occupation, or when vying for a new occupation altogether (Savickas, 1997). Providers of vocational guidance can leverage this understanding to assist their counselees when preparing to enter any occupation for that matter (Bassot , 2012). The idea is to assess a counselee's degree of adaptability and if needs be, work towards instilling attributes that could help the counselee navigate any changes in occupation constructively.

Human resource practitioners can benefit on multiple fronts including hiring right in the first place (Kruger, 2015), retaining existing staff, and guiding succession planning. Predicting employee churn due to career switching can help an organisation to proactively manage existing talent pools, update recruitment plans, and budgets to mitigate the adverse consequences of talent loss. When hiring for roles that require employee commitment for a long-term, administering the classification and predictive tools from this study can help an organisation quantify the likelihood of a prospective employee to stay in the role for a long period or not. The same rationale would apply to succession planning. Organisations would ideally not want to earmark talent for top executive roles without sound understanding of the employee's longevity with the organisation. Proactive talent management can reduce the scourge of talent loss.

Having said the above, it is important to note that outputs of the classification and predictive models would be used in conjunction with other considerations to reach a decisive position in a decision-making situation. The models aid the process but do not eliminate the need for enacting sound policies and other mechanisms to mitigate the dire consequences of unintended talent loss.

7.3. Limitations of the current study

In light of the period within which this study had to be completed, the amount of data collected was not ideal. Given that the survey instrument captured 87 variables and only 117 respondents' input was used for analysis, collecting more data could have improved the confidence with which certain conclusions were reached. It would not have been sound to run a logistic regression model at the sub-question level for predictors hence the resort to running a logistic regression model at the construct level of predictors.Though the logistic regression model produced sensible results, the effect of averaging scores of sub-questions and allocating a score per construct could in some cases inhibit the effect of sub-questions that could potentially make sound improvement to the performance of the model. There is contention for and against the practice of averaging Likert scores in analysing and interpreting research findings (Jamieson, 2004). This was to some extent mitigated by building a classification tree at sub-question level which was the most-granular possible level of predictors.

Statistical analysis tests were performed at a 10% level of significance when the commonly accepted level of significance is 5%. Going for 10% made the decision criteria less strict in part to compensate the situation of having little data. The choice of p-values when doing hypothesis testing should not be fixed but rather be set considering the specific circumstance and context of a statistical test (Neyman & Pearson (1933).

Since data was collected at a specific point in time for each respondent, the study was cross-sectional. A longitudinal study could potentially enrich the quality of insights and conclusions drawn from the study as it would capture effects of time and possibly other qualitative events that could be encountered as a professional journeys through life. Rhodes & Doering (1983) asserted that though longitudinal studies required sustained commitment from participants over longer periods of time, they generally yielded richer insights than cross-sectional and retrospective studies. Once again, the time frame within which the study had to be completed posed a constraint on what could be executed and achievable.

Whilst efforts were made to obtain a multicultural respondent base, it still was the case that certain cultures and nationalities were not represented in the sample. This assertion is reasonable considering that there are more than 190 countries in the world (Worldatlas, 2015) and yet the sample had 117 respondents whose submissions went on to be analysed. The survey was administered in the Gauteng province of South Africa, which generally is an economic powerhouse attracting professionals from various parts of the world, and characterised with cultural diversity that cannot go unnoticed. It would be helpful if this study were conducted in other parts of the world and results compared to see if outcomes can be generalised irrespective of where in the world the survey gets administered. Culture can influence beliefs and value systems which in turn, can impact the responses provided by participants.

7.4. Directions for future research

It was noted that a quarter of respondents in this study said they had not changed career but were open to change nonetheless. It would be interesting to understand why such professionals did not change career even though they were open to change. Findings could validate or refute the notions of contextual support and contextual barriers highlighted in social cognitive career theory (Lent, Brown & Hackett, 2000).

Whilst Fisher's exact tests confirmed association between categorical variables and the binary response variable (career switching), no additional insights on the nature of that association were generated in the present study. More research to unpack the nature of the association could enhance our understanding of career switching.

7.5. Concluding Remarks

The title of this research specified an "extended integrative approach" to studying career switching in the 21st century. The "integrative" element has been demonstrated through results in Chapter 5 and was articulated in the discussion in Chapter 6. Special reference was made to the logistic regression, classification tree and confirmatory factor analysis in showing the joint contribution of multiple career development theories in explaining career switching phenomena. The "extended" aspect of the topic, however, has not been addressed yet and this section (7.5) will address that.

Whilst constructs and statements in the integrated theoretical framework made no mention of demographic variables, some of the tests reported in Chapter 5 did show the relevance and usefulness of selected demographic variables especially age and age-group. Fisher's exact test revealed strong association between age-group and career switching. Similarly, Fisher's test suggested association between the level of education (qualification) and career switching. Both results aligned with findings from earlier studies (Carless & Arnup, 2011). Age was used as the third most important variable on the classification tree. Given the notable relevance of demographic variables in studying career switching, I contend to add demographic variables to the integrated theoretical framework in all career-related studies. Inclusion of

demographic variables constitutes the “extended” aspect of the research topic bringing alignment between the subject of this research and the actual empirical work conducted.

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9. APPENDICES

9.1. Appendix 1: Consistency Matrix

TITLE: Career switching in the 21st century: an extended integrative approach

PROPOSITIONS / QUESTIONS / HYPOTHESES	LITERATURE REVIEW	DATA COLLECTION TOOL	ANALYSIS
1. Why do professionals switch careers?	Rhodes & Doering, 1983 Neapolitan, 1980 Lent, Hackett & Brown, 2000 Donohue, 2006	Questionnaire questions 4a to 4d	Thematic analysis (text analytics)
2. How do career switchers differ from non-switchers?	Lent, Brown & Hackett, 1994 Briscoe, Hall & DeMuth, 2006	Questionnaire questions 9 to 87 (variables in the integrated theoretical framework were considered in testing for differences)	Independent t-tests
3. What is the relationship between level of education and career switching?	Carless & Arnup, 2011 Field, 2013	Questionnaire question 3	Fisher's exact test of association
4. What is the relationship between age-group and career switching?	Carless & Arnup, 2011 Field, 2013	Questionnaire question 7	Fisher's exact test of association
5. Are the profiles of career switchers and non-switchers the same?	Briscoe, Hall & DeMuth, 2006 Shmueli, Patel & Bruce, 2011 Sullivan, Carraher & Mainiero, 2009 Lent & Brown, 2013 Lent, Brown & Hackett, 1994 Lent, Hackett & Brown, 2000 Lochab & Mor,2013 Verbruggen, 2012 Gubler, Arnold & Coombs ,2014	Questionnaire questions 1 to 87 (all variables were considered in profiling respondents using the classification tree)	Classification tree
6. Is inclination towards career switching predictable?	Shmueli, Patel & Bruce, 2011 Field, 2013	Questionnaire questions 1 to 87 (all variables were considered in building the logistic regression model)	Binary logistic regression model

9.2. Appendix 2: Career Switching Survey Questionnaire with Informed Consent

Informed Consent

I am conducting research on career switching. To that end, you are asked to complete this questionnaire. Responses will help us to better-understand reasons for switching or not-switching careers as well as typical profiles of career switchers and non-switchers. Completion should take no more than 20 minutes of your time. Your participation is voluntary and you can withdraw at any time without penalty. All data will be kept confidential. By completing the questionnaire, you indicate that you voluntarily participate in this research. If you have any concerns, please contact my Supervisor or me. Our details are provided below.

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Note: In completing this questionnaire, it is important to clarify the difference between career change and job change. Career change involves movement to a new profession or occupation that is not part of a typical career progression. It can be defined as changing to a work position in a different occupation category or field, where previous skills and responsibilities are largely irrelevant and new training is undertaken. Career change can be distinguished from job change which is movement to a similar job or a job that is part of a normal career path. A Doctor becoming a Lawyer or an Engineer becoming an Accountant are examples of career change. Career change typically involves considerable cost for the individual due to the additional training and human investment required, and lost time and income (Blau, 2007).

Career Switching Questionnaire

1. In your professional history have you;
   a. Changed career,
   b. Not changed career, but intending to change in the foreseeable future, or
   c. Not changed career, and not intending to change?

2. How many years of professional work experience do you have?

3. What is your highest level of educational attainment (Bachelor's Degree, Honours, Masters, or PhD)?

4. If you changed career at some stage;
   a. Why did you change career?
   b. What was your occupation prior to the change?
   c. What was/is your occupation after the change?
   d. Was the career change; (i) voluntary or (ii) involuntary?
   e. Not Applicable (did not change career).

5. Complete the following statement. "I changed career because of"
   a. Unpleasant conditions/attributes/features of my previous career (push factors)
   b. Attractive conditions/attributes/features of the new career (pull factors)
   c. Both push and pull factors
   d. Personal reasons other than push and/or pull factors. Specify _____
   e. Not Applicable (did not change career).

6. Gender? a. Male _____ b. Female _____
7. Date of Birth (dd/mm/yyyy)? _____ // _____// _____
8. Population Group: a. Black b. Coloured c. White d. Indian e. Other

Please indicate the extent to which the following statements are true of you.

Kaleidoscope Measurement Scales (Sullivan et al., 2009).

		Does not describe me at all	Describes me somewhat	Describes me often	Describes me considerably	Describes me very well
	Authenticity					
9	I hope to find a greater purpose to my life that suits who I am					
10	I hunger for greater spiritual growth in my life					
11	I have discovered that crises in life offer perspectives in ways that daily living does not					
12	If I could follow my dream right now, I would					
13	I want to have an impact and leave my signature on what I accomplish in life					
	Balance					
14	If necessary, I would give up my work to settle problematic family issues or concerns					
15	I constantly arrange my work around my family needs					
16	My work is meaningless if I cannot take the time to be with my family					
17	Achieving balance between work and family is life's holy grail					
18	Nothing matters more to me right now than balancing work with my family responsibilities					
	Challenge					
19	I continually look for new challenges in everything I do					
20	I view setbacks not as "problems" to be overcome but as "challenges" that require solutions					
21	Added work responsibilities do not worry me					
22	Most people would describe me as being very goal-directed					
23	I thrive on work challenges and turn work problems into opportunities for change					

Social Cognitive Career Theory Measurement Scale (adapted from Kier et al., 2014).

	Self-Efficacy					
24	I learn fast and, should I take on a new career, will succeed					
25	I am able to complete my current career commitments to expectation/perfection					
	Personal Goals					
26	I plan to use my expertise in a different career					
27	I will work hard, given a new career opportunity					
	Outcome Expectations					
28	If I do well in a new career, I will be more fulfilled					
29	My family will like it if I pursue a different (new) career					
	Interests					
30	I have interest in a career other than my current career					
31	During my spare time, I read a lot about my intended new career					
	Contextual Supports					
32	I have a role model in my intended new career					
33	I know someone in my family who is doing well in my intended career field					
	Contextual Barriers					
34	Even if I wanted to change career, my circumstances are (would be) restrictive					
35	Policies and preferences in the intended career landscape do not promote my cause					

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

Career Adapt - Ability Scale (Copyright Savickas & Porfeli, 2012)

		Not Strong	Somewhat Strong	Strong	Very Strong	Strongest
	Ability					
	Concern					
36	Thinking about what my future will be like					
37	Realising that today's choices shape my future					
38	Preparing for the future					
39	Becoming aware of the educational and vocational choices that I must make					
40	Planning how to achieve my goals					
41	Concerned about my career					
	Control					
42	Keeping upbeat					
43	Making decisions by myself					
44	Taking responsibility for my actions					
45	Sticking up for my beliefs					
46	Counting on myself					
47	Doing what's right for me					
	Curiosity					
48	Exploring my surroundings					
49	Looking for opportunities to grow as a person					
50	Investigating options before making a choice					
51	Observing different ways of doing things					
52	Probing deeply into questions I have					
53	Becoming curious about new opportunities					
54	**Confidence**					
55	Performing tasks efficiently					
56	Taking care to do things well					
57	Learning new skills					
58	Working up to my ability					
59	Overcoming obstacles					
60	Solving problems					

In this section, please indicate the extent to which the given statements are true for you.

Protean (61-74) and Boundaryless (75-87) Career Attitude Scales (Copyright Briscoe, Hall & DeMuth, 2006).

		To little or no extent	To a limited extent	To some extent	To a considerable extent	To a great extent
	Statement					
	Self-Directed Career Management					
61	When development opportunities have not been offered by my company, I've sought them out on my own					
62	I am responsible for my success or failure in my career					
63	Overall, I have a very independent, self-directed career					
64	Freedom to choose my own career path is one of my most important values					
65	I am in charge of my own career					
66	Ultimately, I depend upon myself to move my career forward					
67	Where my career is concerned, I am very much "my own person"					
68	In the past, I have relied more on myself than others to find a new job when necessary					
	Values-Driven Career Management					
69	I navigate my own career, based on my personal priorities, as opposed to my employer's priorities					
70	It doesn't matter much to me how other people evaluate the choices I make in my career					
71	What's most important to me is how I feel about my career success, not how other people feel about it.					
72	I'll follow my own conscience if my company asks me to do something against my values					
73	What I think about what is right in my career is more important to me than what my company thinks					
74	In the past, I have sided with my own values when the company has asked me to do something I don't agree with					
	Boundaryless Mindset					
75	I seek job assignments that allow me to learn something new					
76	I would enjoy working on projects with people across many organisations					
77	I enjoy job assignments that require me to work outside of the organisation					
78	I like tasks at work that require me to work beyond my own department					
79	I enjoy working with people outside of my organisation					
80	I enjoy jobs that require me to interact with people in many different organisations					
81	I have sought opportunities in the past that allow me to work outside the organisation					
82	I am energised in new experiences and situations					
	Organisational Mobility Preference					
83	I like the predictability that comes with working continuously for the same organisation					
84	I would feel very lost if I couldn't work for my current organisation					
85	I prefer to stay in a company I am familiar with than look for employment elsewhere					
86	If my organisation provided lifetime employment, I would never desire to seek work in other organisations					
87	In my ideal career, I would work for only one organisation					

9.3. Appendix 3: Detailed Classification Tree Rules

Prob(Inyourprofessionalhistoryhaveyou==a) **Changed Career in Professional History**

```
If(
	:Name(
		"I am able to complete my current career commitments to expectation/perfection"
	) == 1 | :Name(
		"I am able to complete my current career commitments to expectation/perfection"
	) == 2,
		If(
			:I enjoy working with people outside of my organisation == 2 |
			:I enjoy working with people outside of my organisation == 3,
				0.0936980056980057,
			:I enjoy working with people outside of my organisation == 5 |
			:I enjoy working with people outside of my organisation == 4,
				If(
					:
					I like the predictability that comes with working continuously for the same organisation
					 == 1 |
					:I like the predictability that comes with working continuously for the same organisation
					 == 4, 0.0404944115713347,
					:
					I like the predictability that comes with working continuously for the same organisation
					 == 5 |
					:I like the predictability that comes with working continuously for the same organisation
					 == 3 |
					:I like the predictability that comes with working continuously for the same organisation
					 == 2, 0.612055536218432,
					0.400210387902696
				),
			0.285470085470085
		),
	:Name(
		"I am able to complete my current career commitments to expectation/perfection"
	) == 5 | :Name(
		"I am able to complete my current career commitments to expectation/perfection"
	) == 4 | :Name(
		"I am able to complete my current career commitments to expectation/perfection"
	) == 3,
		If(
			:Name( "I will work hard, given a new career opportunity" ) == 2 |
			:Name( "I will work hard, given a new career opportunity" ) == 4,
				If(
					:Planning how to achieve my goals == 1 |
					:Planning how to achieve my goals == 4 |
					:Planning how to achieve my goals == 2, 0.405086130465877,
					:Planning how to achieve my goals == 3 |
					:Planning how to achieve my goals == 5, 0.914219301951369,
					0.729484088344848
				),
			:Name( "I will work hard, given a new career opportunity" ) == 5 |
			:Name( "I will work hard, given a new career opportunity" ) == 3 |
			:Name( "I will work hard, given a new career opportunity" ) == 1,
				If(
					:
					What I think about what is right in my career is more important to me than what my company thinks
					 == 2 |
					:What I think about what is right in my career is more important to me than what my company thinks
					 == 3 |
					:What I think about what is right in my career is more important to me than what my company thinks
					 == 4,
						If(
							:
							I would enjoy working on projects with people across many organisations
							 == 4, 0.643165533777863,
							:
							I would enjoy working on projects with people across many organisations
							 == 5 |
							:I would enjoy working on projects with people across many organisations
							 == 3, 0.496402912514665,
							0.550658313746191
						),
					:
					What I think about what is right in my career is more important to me than what my company thinks
					 == 5,
						If( Is Missing( :age ) | :age < 34,
							0.0278759455388277,
							0.282521936461966
						),
					0.354337586031841
				),
			0.486313967326626
		),
	0.418803418803419
)
```

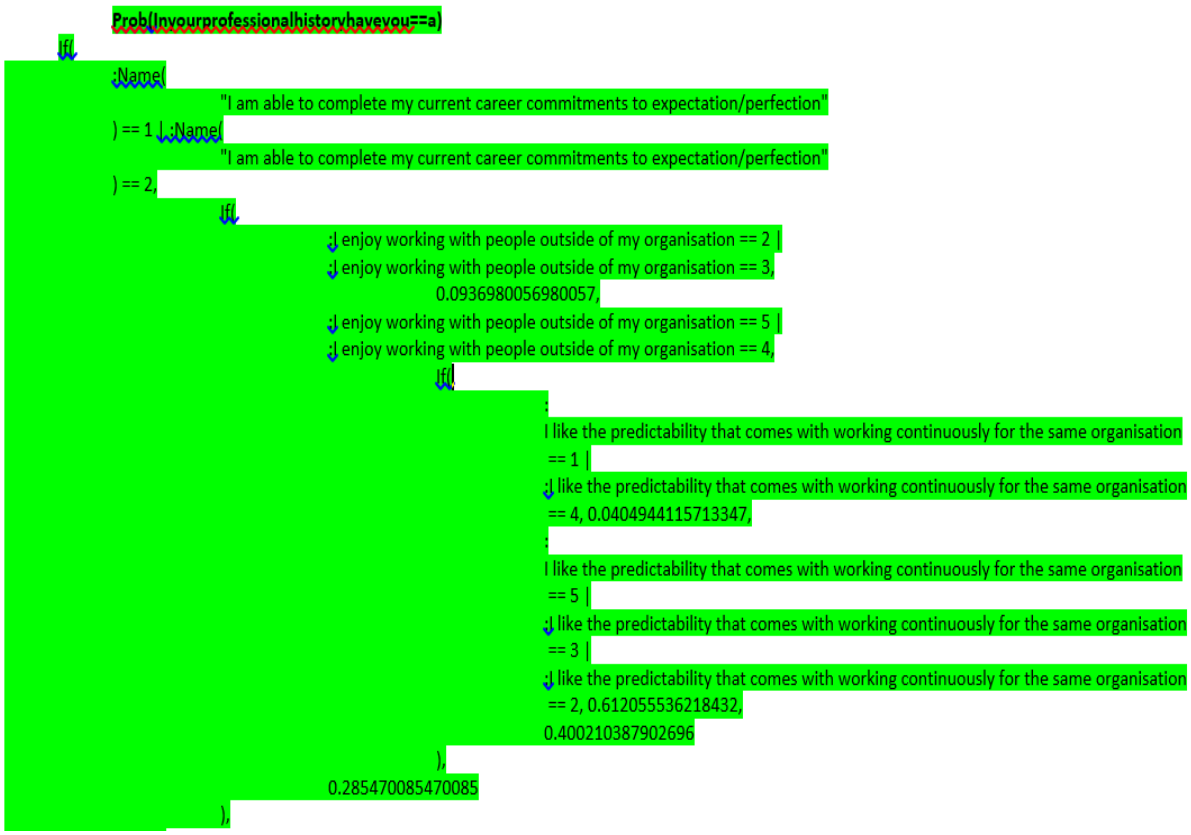
Prob(Inyourprofessionalhistoryhaveyou==b) **Did not Change Career in Professional History, but Open to Change**

```
If(
    :Name(
        "I am able to complete my current career commitments to expectation/perfection"
    ) == 1 | :Name(
        "I am able to complete my current career commitments to expectation/perfection"
    ) == 2,
        If(
            :I enjoy working with people outside of my organisation == 2 |
            :I enjoy working with people outside of my organisation == 3,
                0.0155940170940171,
            :I enjoy working with people outside of my organisation == 5 |
            :I enjoy working with people outside of my organisation == 4,
                If(
                    :
                    I like the predictability that comes with working continuously for the same organisation
                    == 1 |
                    :I like the predictability that comes with working continuously for the same organisation
                    == 4, 0.121526503944773,
                    :
                    I like the predictability that comes with working continuously for the same organisation
                    == 5 |
                    :I like the predictability that comes with working continuously for the same organisation
                    == 3 |
                    :I like the predictability that comes with working continuously for the same organisation
                    == 2, 0.0126626493792783,
                    0.0474580867850099
                ),
            0.0314102564102564
        ),
    :Name(
        "I am able to complete my current career commitments to expectation/perfection"
    ) == 5 | :Name(
        "I am able to complete my current career commitments to expectation/perfection"
    ) == 4 | :Name(
        "I am able to complete my current career commitments to expectation/perfection"
    ) == 3,
        If(
            :Name( "I will work hard, given a new career opportunity" ) == 2 |
            :Name( "I will work hard, given a new career opportunity" ) == 4,
                If(
                    :Planning how to achieve my goals == 1 |
                    :Planning how to achieve my goals == 4 |
                    :Planning how to achieve my goals == 2, 0.569400673166496,
                    :Planning how to achieve my goals == 3 |
                    :Planning how to achieve my goals == 5, 0.0146337447128586,
                    0.223850095052627
                ),
            :Name( "I will work hard, given a new career opportunity" ) == 5 |
            :Name( "I will work hard, given a new career opportunity" ) == 3 |
            :Name( "I will work hard, given a new career opportunity" ) == 1,
                If(
                    :
                    What I think about what is right in my career is more important to me than what my company thinks
                    == 2 |
                    :What I think about what is right in my career is more important to me than what my company thinks
                    == 3 |
                    :What I think about what is right in my career is more important to me than what my company thinks
                    == 4,
                        If(
                            :
                            I would enjoy working on projects with people across many organisations
                            == 4, 0.129392623902793,
                            :
                            I would enjoy working on projects with people across many organisations
                            == 5 |
                            :I would enjoy working on projects with people across many organisations
                            == 3, 0.489154012580417,
                            0.367348863202685
                        ),
                    :
                    What I think about what is right in my career is more important to me than what my company thinks
                    == 5,
                        If (Is Missing ( :age ) | :age < 34,
                            0.379309601813312,
                            0.692527868782197
                        ),
                    0.447457743489876
                ),
            0.370334307043168
        ), 0.256410256410256)
```

Prob(Inyourprofessionalhistoryhaveyou==c) **Did not Change Career in Professional History, Not Open to Change**

```
If(
	:Name(
		"I am able to complete my current career commitments to expectation/perfection"
	) == 1 | :Name(
		"I am able to complete my current career commitments to expectation/perfection"
	) == 2,
		If(
			:I enjoy working with people outside of my organisation == 2 |
			:I enjoy working with people outside of my organisation == 3,
				0.890707977207977,
			:I enjoy working with people outside of my organisation == 5 |
			:I enjoy working with people outside of my organisation == 4,
				If(
					:
					I like the predictability that comes with working continuously for the same organisation
					 == 1 |
					:I like the predictability that comes with working continuously for the same organisation
					 == 4, 0.837979084483892,
					:
					I like the predictability that comes with working continuously for the same organisation
					 == 5 |
					:I like the predictability that comes with working continuously for the same organisation
					 == 3 |
					:I like the predictability that comes with working continuously for the same organisation
					 == 2, 0.37528181440229,
					0.552331525312295
				),
			0.683119658119658
		),
	:Name(
		"I am able to complete my current career commitments to expectation/perfection"
	) == 5 | :Name(
		"I am able to complete my current career commitments to expectation/perfection"
	) == 4 | :Name(
		"I am able to complete my current career commitments to expectation/perfection"
	) == 3,
		If(
			:Name( "I will work hard, given a new career opportunity" ) == 2 |
			:Name( "I will work hard, given a new career opportunity" ) == 4,
				If(
					: Planning how to achieve my goals == 1 |
					: Planning how to achieve my goals == 4 |
					: Planning how to achieve my goals == 2, 0.0255131963676267,
					: Planning how to achieve my goals == 3 |
					: Planning how to achieve my goals == 5, 0.0711469533357719,
					0.0466658166025255
				),
			:Name( "I will work hard, given a new career opportunity" ) == 5 |
			:Name( "I will work hard, given a new career opportunity" ) == 3 |
			:Name( "I will work hard, given a new career opportunity" ) == 1,
				If(
					:
					What I think about what is right in my career is more important to me than what my company thinks
					 == 2 |
					:What I think about what is right in my career is more important to me than what my company thinks
					 == 3 |
					:What I think about what is right in my career is more important to me than what my company thinks
					 == 4,
						If(
							:
							I would enjoy working on projects with people across many organisations
							 == 4, 0.227441842319344,
							:
							I would enjoy working on projects with people across many organisations
							 == 5 |
							:I would enjoy working on projects with people across many organisations
							 == 3, 0.0144430749049176,
							0.0819928230511239
						),
					:
					What I think about what is right in my career is more important to me than what my company thinks
					 == 5,
						If( Is Missing( :age ) | :age < 34,
							0.592814452647861,
							0.0249501947558374
						),
					0.198204670478283
				),
			0.143351725630207
		), 0.324786324786325)
```

9.4. Appendix 4: Example - Interpreting Classification Tree Rules



The first part of the above rules says; the probability of a professional switching career is 0.09 if the professional scores 1 or 2 in the ability to complete current career commitments to expectation/perfection and scores either a 2 or a 3 in enjoying working with people outside his or her organisation. Briscoe, Hall & DeMuth (2006) found as discussed in chapter 2, that a boundaryless mindset was positively associated with openness to experience which, in turn, could suggest higher propensity to switch careers. A low score of 2 or 3 in embracing working with people outside one's organisation explains why the probability to switch was as low as 0.09 stated above.

N.B. *Whilst interpreting and applying tree rules can be difficult to someone not familiar with classification trees, the good news is that many software packages do it in the back end and tell the user just the outcome of classification and probability thereof*.

9.5. Appendix 5: Ethical Clearance

Gordon Institute of Business Science
University of Pretoria

Dear Justice Chikomba

Protocol Number: **Temp2015-01888**

Title: **Career switching in the 21st century: an extended integrative approach**

Please be advised that your application for Ethical Clearance has been APPROVED.

You are therefore allowed to continue collecting your data.

We wish you everything of the best for the rest of the project.

Kind Regards,

Adele Bekker