Investigating the psychometric properties of the Career Agility Scale in a sample of South African employees

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Mini-dissertation accepted in partial fulfilment of the requirements for the degree Master of Arts in Industrial and Organisational Psychology at the North-West University

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Graduation: May/June 2026

COMMENTS

The reader is reminded of the following:

- The editorial style of this manuscript follows the guidelines of the South African Journal of Industrial Psychology (SAJIP).
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- The mini-dissertation is submitted in the form of a research article.
- Chapter 1 is the revised research proposal and may be presented in a different tense.
- Each chapter contains its reference list.
- Chapter 2 will be submitted for publication in the South African Journal of Industrial Psychology.

ACKNOWLEDGEMENTS

I wish to thank the following people for their assistance in the research project. Without these individuals, the study would not have been possible:

- Prof Bouwer Jonker, for your continuous support and belief in me. Thank you for all the effort and support provided from across the ocean. I would not have been able to complete this research project successfully without your assistance.
- To my co-supervisor, Prof Leon de Beer, thank you for your assistance, support and effort shown throughout the duration of this study.
- To my Mimi, Brother, and Duncan, thank you for the love, support, and motivation you have provided me during this lengthy process. You are true examples of strength, support and encouragement. Thank you for believing in me.
- To Luna and Lemon for always being by my side.
- Thank you to all my friends for supporting me, ready to lend me an ear or a hand when I needed one.
- Thank you to Prof Melinde Coetzee for conceptualising career agility and the CAS.
- Last but not least, thank you to Monica Botha for her patience, support and the proficient and timely manner in which the language editing was done.

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Economic and Management Sciences Research
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31 January 2022

Dr BE Jonker / Prof L de Beer
Per e-mail
Dear Dr Jonker and Prof de Beer,

EMS-REC FEEDBACK: 28012022
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Study leader: Dr BE Jonker / Prof L de Beer – MA in Industrial Psychology

Your ethics application on, ***Investigating the psychometric properties of the Career Agility Scale in a sample of South African employees***, which served on the EMSREC meeting of 28 January 2022, refers.

Outcome:

Approved as a minimal risk study. A number **NWU-00559-22-A4** is given for one year of ethics clearance.

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Kind regards,

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TO WHOM IT MAY CONCERN

This serves to confirm that I have edited and proofread the mini-dissertation entitled

Investigating the psychometric properties of the Career Agility Scale in a sample of South African employees

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MONICA BOTHA
27 November 2025

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SUMMARY

Title: Investigating the psychometric properties of the Career Agility Scale in a sample of South African employees.

Keywords: Career adaptability, career agility, job satisfaction, reliability, self-regulation, validity, South African employees.

Rapid technological change, the fourth industrial revolution and the lasting effects of the COVID-19 pandemic have fundamentally altered how organisations operate and how employees manage their careers. Continuous digital disruption, new ways of working and shifting skill demands require employees to remain open to learning, engage proactively with change and draw on psychological resources that support adaptive behaviour. Career agility has been highlighted as a key resource that enables employees to navigate this uncertainty, yet empirical research on career agility and its measurement remains limited, particularly in the South African context. The Career Agility Scale (CAS) was recently developed to assess employees' readiness to adapt to technological advancement, engage in agile learning and navigate changing career environments. However, few independent studies have examined its reliability, validity or its links with career adaptability and important career outcomes such as job satisfaction and self-regulation.

The general objective of this research was to investigate the psychometric properties of the CAS in a sample of South African employees. Specifically, the study aimed to evaluate the factor structure of the CAS, examine its internal consistency, convergent and discriminant validity, and assess its criterion related validity in relation to career adaptability, job satisfaction and self-regulation. A further objective was to test a structural model in which career agility was specified as an antecedent to career adaptability, with both constructs related to job satisfaction and self-regulation, including the potential mediating role of career adaptability.

A quantitative, cross sectional survey design was used. Employed adults in South Africa (n = 269) were recruited via purposive non-probability sampling. Participants were 18 years or older, employed, and had completed at least Grade 12 to ensure sufficient language proficiency for the self-report instruments. The survey included a biographical questionnaire, the Career Agility Scale, the Career Adapt Abilities Scale Short Form, a three-item job satisfaction scale and the Short Self-Regulation Questionnaire. Data were analysed using JASP and Mplus. Confirmatory factor analysis and exploratory structural equation modelling

(ESEM) were applied to test the three-factor structure of the CAS (technological adaptivity, agile learning and career navigation) and to evaluate model fit. Composite reliability coefficients were calculated to assess internal consistency. Convergent and discriminant validity were examined through intercorrelations among latent variables. Structural equation modelling was then used to test the hypothesised relationships between career agility, career adaptability, job satisfaction and self-regulation, including indirect effects.

The ESEM model supported the intended three factor structure of the CAS, with acceptable global fit indices and substantial factor loadings for most items. Composite reliability coefficients for technological adaptivity, agile learning and career navigation were all above recommended thresholds, indicating good internal consistency. Career agility showed strong positive associations with career adaptability and moderate positive relationships with job satisfaction and self-regulation, supporting convergent validity. Discriminant validity was largely acceptable, although the high correlation between career agility and career adaptability indicated conceptual closeness between the constructs.

Structural modelling indicated that career agility positively predicted career adaptability and job satisfaction, while its direct association with self-regulation was not significant once adaptability was included. Career adaptability was positively related to self-regulation but not to job satisfaction. Mediation analyses showed a positive indirect effect of career agility on self-regulation via career adaptability, while the indirect effect on job satisfaction was small and negative, indicating an inconsistent mediation pattern.

Overall, the findings provided initial independent support for the psychometric soundness of the Career Agility Scale in a South African sample. The results confirmed the three-factor structure, internal consistency and key aspects of convergent and discriminant validity and clarified the role of career agility as an antecedent to career adaptability and related career outcomes. Future recommendations and limitations of the study were also discussed. The study contributes to Industrial and Organisational Psychology literature by extending empirical research on career agility and offers a validated tool to support assessment and development initiatives in dynamic work contexts.

CHAPTER 1

INTRODUCTION

INTRODUCTION

Continual changes in the work landscape compel organisations and individuals to reassess their business strategies and existing skill sets, to ensure they can adapt to the evolving demands of the current and future work environment (Stofile et al., 2023; World Economic Forum, 2025). Subsequently, employees need to be ready to utilise their personal resources to cope with the ongoing changes resulting from the fourth industrial revolution (4IR), rapid technological progress, and the repercussions of COVID-19 (Coetzee et al., 2020; Hirschi, 2018; Rikala et al., 2024). This is crucial for actively engaging in learning new skills, adapting to changes, and taking initiative to ensure continued job satisfaction and growth (Hirschi, 2018; Li, 2022). To strengthen these capabilities, organisations have concentrated on reskilling their employees to meet the upcoming needs of the dynamic environment, while also encouraging a culture of continuous learning (Li, 2022; Mehta & Walunjkar, 2021). Career adaptability has been explored as a mechanism for supporting individuals through extensive change that may occur throughout their careers and identifying personal resources to cope with this change (Chen et al., 2024; Savickas, 2013). Recent studies have proposed career agility as an antecedent of career adaptability, which refers to an employee's capacity to embrace and adapt to the continuous change occurring in the workplace, to demonstrate ongoing curiosity and receptivity to learning and a positive attitude to technological advancements (Coetzee et al., 2020; Coetzee et al., 2021). As the world of work continues to evolve and change in response to the 4IR, the lasting impact of the pandemic and the technological advancement, career agility will become critical for the success at both an organisational level and employee level (Coetzee et al., 2020; Coetzee, et al., 2021; Hirshi, 2018).

Career agility is a relatively new construct and, as such, limited studies exist within both the global and local context that link it to positive organisational outcomes such as job satisfaction and self-regulation. Furthermore, the Career Agility Scale (CAS) has been developed recently to provide insight into an individual's capacity to adapt to the new world of work (Coetzee et al., 2020; Coetzee et al., 2021). The psychometric properties of the CAS, specifically its reliability and validity in the South African context, are not well understood. Based on these gaps, this study aimed to investigate: (a) the reliability and validity of the CAS for a sample of South African employees in a post-COVID context, and (b) the relationship between career agility, career adaptability, job satisfaction and self-regulation.

1.1 Contextualisation and problem statement

Constant change, increasing technological advancements and a surge in information characterise the current work environment (Anwar & Graham, 2021; Ferreira et al., 2023; Ghislieri et al., 2018; World Economic Forum, 2025). The accelerated change and advancements in technology are recognised as the 4IR and have and continue to change the way in which employees and organisations operate drastically, how they interact and how they prepare for the future (Ammirato et al., 2023; Ghislieri et al., 2018; Oosthuizen, 2022).

For employees to cope and meet the demands of this changing environment, a need has emerged for them to demonstrate the ability to quickly respond and adapt to the dynamic work requirements (Anwar & Graham, 2021; Johnston, 2018; Rikala et al., 2024). The progression of the 4IR has introduced new ways of working, engaging, leading and has emphasised collaboration globally (Hirschi, 2018; Mayer, 2024). This swift change and disruption have been further compounded by the global impact of COVID-19 on the world of work (Savić & Dobrijevic, 2022; Schmidtner et al., 2021). Organisations, leaders and employees are scrambling to identify new ways of working and adapting to a vastly different working environment (Chatterjee et al., 2023; Konstant, 2020; Li, 2022; Rikala et al., 2024). Digitalisation, automation and technological advancements have ushered in change at a rapid rate that has contributed to a shift in how employees perform tasks as well as how organisations structure their workforce (Chatterjee et al., 2023; De Stefano, 2016; Frey & Osborne, 2017; Hirschi, 2018). Subsequently these changes have resulted in employees having to adapt as they are required to utilise different skills, competencies and behaviours to meet the new demands of their respective roles and changing work environments (Cammarosano et al., 2019; Hirschi, 2018; Rikala et al., 2024).

One way in which organisations have responded to the constant change and technological advancement is through the implementation of lifelong learning or continuous learning (Sandford et al., 2020; University of West Alabama [UWA] Online, 2017; World Economic Forum, 2025). Continuous learning refers to an organisation's focus and ongoing effort to enhance and upskill employees regarding skills, competencies and knowledge to react to the changes and technological advancements (Maunula et al., 2024; UWA, 2017). The implementation of continuous learning creates the opportunity for employees to develop and enhance their skills (Beqiri & Mazreku, 2020; Shet, 2024). However, employees need to be open-minded and adopt a positive perspective towards learning to navigate the apparent changes and technological progression effectively (Coetzee et al., 2020; Johnston, 2018). The

willingness to engage in continuous learning, especially obtaining skills to keep pace with technological advancement, has resulted in the emergence and focus on a relatively new concept, career agility.

Research conducted across diverse regions, industries, and occupational levels identified several disruptors to workplace learning due to technological advancement and the COVID-19 pandemic, which included the transformation of jobs by automation, access to more information than ever before and the inclusion of artificial intelligence (AI), cloud computing and robotics (Babashahi, et al., 2024; Derrick et al., 2022; World Economic Forum, 2025). Subsequently, the uncertainty, disruption and change that characterise the new world of work have led to researchers, practitioners and organisations investigating several career-related outcomes that can assist organisations and employees. Despite the increasing awareness and concern regarding the 4IR and the impact of technological advancements on the experiences of employees, limited academic research in career psychology has been conducted (Hirschi, 2018; Shet, 2024). Therefore, research related to this will offer more insight into the experiences of individuals as well as assist organisations in informing any interventions to support the continuous change in the world of work.

1.1.1 Career agility

The impact of the 4IR and the COVID-19 pandemic have emphasised the need for organisations and employees to take proactive steps to meet the requirements of this dynamic work environment. Initially, career agility evolved as an aspect of adaptivity which relates to one's appropriate and efficient reaction to the shifts in the work context (Coetzee et al., 2020; Coetzee et al., 2021; Konstant, 2020). Career agility has been described as an employee's capacity to make use of different competencies in relation to the business context (Bennett & Miles, 2010; Giulioni, 2021). Moreover, career agility contributes to an individual's success in the workplace because it enables individuals to deal with ambiguity and change which consistently characterises the world of work (Bennett & Miles, 2010). Furthermore, the role of learning and continuously adapting to the dynamic requirements of work contribute to job success (Bennett & Miles, 2010). Similarly, Konstant (2020) characterises an agile career as a dynamic and introspective journey, progressively adapting to changes, shifting job roles, and aimed at maximising creativity, development, and satisfaction. While this definition acknowledges that career agility is concerned with addressing changes in the world of work, it also incorporates personal aspects such as contentment and a desire to learn and grow. Similarly, another proposed definition describes career agility as the ability to proficiently

manage the full range of favourable and adverse experiences encountered in the workplace daily while aspiring for growth, remaining positive, flexible, and persevering throughout the career growth journey (University of British Columbia [UBC], 2020). There is little variance in the small number of existing definitions of career agility as most proposed descriptors acknowledge that it is the ability to respond to change in the world of work. Some definitions expand on this and further incorporate the role of regulating one's response to change. Considering the various definitions that have emerged recently, Coetzee et al. (2020) propose that *career agility* signifies an individual's preparedness and eagerness to proactively adjust to technological advancements and engage in lifelong learning. Adaptive readiness refers to the psychological readiness to address unknown, different and complicated situations, tasks and changes in a pre-emptive as well as adaptable manner (Hirschi et al., 2015). Upon examining the world of work (especially with regard to the impact of the 4IR and the COVID-19 pandemic), characterised by ambiguity, change and uncertainty, it is clear that career agility is a necessary concept to meet the demands of this context. Career agility addresses three dimensions which have been greatly affected by the 4IR and COVID-19 pandemic, namely the progression and use of technology in organisations, the adoption of continuous learning to meet the challenges in the world of work, as well as the importance of adapting to change (Coetzee et al., 2021).

The importance of career agility in responding to the changes brought about by the 4IR, led to the development of the Career Agility Scale (CAS) by Coetzee et al. (2020; Coetzee et al., 2021). The CAS is based on the career adaptation model of Savickas (Coetzee et al., 2020; Coetzee et al., 2021). The CAS assesses three dimensions (Coetzee et al., 2020) and are expounded below:

Technological adaptivity entails remaining positive in the face of fast-paced technological advancements and seeking out opportunities for further growth, for example: "*I feel evolving job roles as a result of new technologies optimise my creativity, growth and happiness*".

Career navigation suggests that an individual will seem open to managing any ambiguity or uncertainty that may emerge in their workplace, as well as being open to any opportunities this may present: "*I take advantage of changes in my job and career*".

Agile learning refers to a proactive openness to attaining one's career goals and seeming energised by opportunities to learn, for example: "*I am actively setting career goals and managing the achievement of my career goals*".

The CAS allows for career agility to be measured scientifically as a dimension of adaptive readiness or openness to adjust and respond to alterations and transitions that may impact on an individual's career adaptability resources for career progression and satisfaction (Coetzee et al., 2021). The three dimensions are concerned with different elements relating to adaptive readiness, yet a common theme, namely seeking new opportunities to grow, can be observed in each.

The three dimensions of career agility are aligned to the impact of the 4IR that has been mentioned above. For example, the 4IR has brought about significant technological change and advancement and the CAS acknowledges this (Coetzee et al., 2020). Two previous studies have been conducted by the authors and other researchers which investigated the three-factor structure of the CAS and construct validity respectively (Coetzee et al., 2020; Coetzee et al., 2021). The first study investigating the validity and reliability of the CAS was conducted by the developers (Coetzee et al., 2020). This initial study also appears to be the first that examines career agility as a construct and the proposed link to career adaptability (Coetzee et, al., 2020). Through their research, both construct validity and high internal consistency reliability ($\alpha = 0.90$) were reported for the CAS (Coetzee et al., 2020). Furthermore, the results for the internal consistency reliability ranged from 0.73 to 0.89 for the subscales (Coetzee et al., 2020). The second study investigated the construct validity of the CAS in a sample of international employees which also provides initial findings on the convergent and discriminant validity of the three-factor structure (Coetzee et al., 2021). Outcomes from the second study supported the construct validity of the three-factor structure of the CAS (Coetzee et al., 2021). Additionally, the findings confirmed the construct (convergent and discriminant) validity as well as the categorised structure of the CAS (Coetzee et al., 2021). The two mentioned studies provide a good starting point to build on the empirical evidence supporting the psychometric properties of the CAS. Furthermore, initial research demonstrates that the three dimensions of career agility seem to positively predict an individual's career adaptability (Coetzee et al., 2020). The prediction of career adaptability by career agility is valuable as the application of the CAS assessment may prompt the application of career adaptability capabilities, which are vital for the effective navigation of an individual's career and the attainment of career satisfaction and success (Coetzee et al., 2020). Studies have shown that career adaptability may impact on additional career-related outcomes, such as job satisfaction, and can be affected by self-regulation (Johnston 2018; Maggiori et al., 2017; Merino-Tejedor et al., 2016). The current study aimed to investigate the relationship between these respective constructs with career agility as an antecedent to career adaptability.

1.1.2 Career agility as an antecedent to career adaptability

Career agility has been identified as a significant measure of an individual's adaptive readiness (also referred to as adaptivity) which refers to an individual's enthusiasm and openness to deal with novel, complicated and unclear challenges and uncertainty in the workplace with appropriate and effective responses (Coetzee et al., 2020; Hirschi et al., 2015; Kumi et al., 2024). By examining both constructs (career agility and adaptive readiness), it is evident that there is overlap as both describe the willingness of an individual to adapt to change in the workplace, such as meeting the technological advancement brought about by the 4IR and encouraged by the COVID-19 pandemic. As a result of the impact of the 4IR, organisations are incorporating technology by automating those tasks that can be, such as making use of chatbots for customer service enquiries and applying AI where possible to carry out tasks (Woods et al., 2021). From a more practical perspective, technology may assist organisations in ensuring the work is completed; however, the skills and experience required of employees who will be carrying out the work need to be considered. A recent survey suggests that 74% of organisations have identified the reskilling of their employees as critical to ensuring future success, together with supporting employees as they adapt to the future world of work. This highlights the heavy responsibility placed on the organisations to upskill employees (Li, 2022; Rikala et al., 2024; Woods et al., 2021). At the same time it is also acknowledged that adapting to the future world of work (adaptive readiness) relies on the openness to continuous learning of the employee, especially in terms of new technology (career agility) (Coetzee et al., 2020; Coetzee et al., 2021).

With the emphasis being firmly placed on adapting to the new working world, it is important to understand what contributes to the psychosocial resources of employees, for example the career adaptability of an individual (Coetzee et al., 2021). Savickas (2013) describes *career adaptability* as the psychosocial resources applied by an individual for the effective handling of present and future career development challenges, transitions and work-related stressors that may influence their social assimilation to varying extents throughout their career. Furthermore, Savickas' (2013) definition acknowledges the tension that exists between being able to work with the existing requirements of the workplace, while adapting to the unpredictability and changes that now characterise organisations. The current work context emphasises the importance of career adaptability and it should be considered a crucial psychological skill when dealing with change (Zhang et al., 2019). Career adaptability has been linked to both positive individual and organisational outcomes (Johnston, 2018). This includes a positive effect on job attitudes, specifically job satisfaction and work stress (Fiori et

al., 2015). Furthermore, a review of the research conducted on the protean career concepts highlighted adaptability as a crucial foundation for employees to develop additional competencies to meet the requirements of the dynamic work environment (Gubler et al., 2013). Previously, organisations tended to focus on an employee's ability to retain repetitive learning and emphasised knowledge-based skills and abilities (Rikala et al., 2024; World Economic Forum, 2025). As digitalisation and automation quickly changed the working environment, the behaviours, skills and competencies required by employees to complete their tasks changed. Due to these changes, organisations are now more concerned with how employees will apply their knowledge across a wide variety of tasks. Additionally, the focus will now be on an employee's behavioural competencies rather than a specific academic qualification (Rikala et al, 2024; Sima et. al., 2020). Recent career literature has incorporated this changing work environment, acknowledging the impact that this may have on employee competencies, behaviours and skills and the increasing priority placed on adapting and learning (Ivaldi et al., 2022; Kipper et al., 2021; Muzam, 2023; World Economic Forum, 2025). The working world has been characterised by change; the requirements and demands of employees have shifted with the introduction of new job roles, borderless careers, and different requirements (Boccoli et al., 2024; Cammarosano et al., 2019; Gubler et al., 2013; Muzam, 2023). This is in addition to the changes that the COVID-19 pandemic has enforced globally, which included a shift from face-to-face interaction to a reliance on online platforms for meetings and team collaboration (Allen et al., 2024; Savić & Dobrijevic, 2022; Schmidtner et al., 2021). Developing and enhancing one's career adaptability could not be more vital given the current context. The COVID-19 pandemic ushered in changes to both the professional and personal lives of employees, forcing people to adapt to new ways of working and living (Allen et al., 2024; Schmidtner et al., 2021). In the workplace, such shifts have demanded that employees learn new skills and adapt to the change. Therefore, understanding career adaptability has emerged as a key focus of vocational research (Fiori et al., 2015; Johnston 2018; Maggiori et al., 2017). It highlights the importance of an employee to be able to adapt constantly, learn and respond effectively to unfamiliar demands, situations and to the changing requirements of the workplace (Anwar & Graham, 2021; Johnston, 2018; Savickas, 1997). As the world progresses post the COVID-19 pandemic and adjusts to the dynamic working world, further research and understanding of career adaptability and its wider impact is required.

As a result of the above-mentioned discussion, 'adaptive readiness' and in turn, career agility, are seen to be crucial antecedents to career adaptability (Coetzee et al., 2020; Hirschi et al., 2015; Johnston, 2018). In terms of the career construction theory, the psychosocial resources tend to be initiated by adaptive readiness (Hirschi et al., 2015). This, in turn, seems to assist

employees in pre-emptively addressing the requirements of the technology orientated workplace (Coetzee et al., 2020; Savickas & Porfeli, 2012). Subsequently, Savickas' (1997) model of career adaptability served as the theoretical foundation for this study.

1.1.3 Job satisfaction, self-regulation and career agility

When coping with a change or transition, employees may need to draw on internal resources such as self-regulation (Savickas & Porfeli, 2012). Furthermore, career adaptability has become increasingly popular as a resource for employees to assist in adjusting to the changing work environment and requirements (Johnston, 2018). By drawing upon self-regulation skills and adaptability resources (career adaptability), employees can tap into essential competencies to deal effectively with the changing workplace conditions (Anwar & Graham, 2021; Maggiori et al., 2017).

Job satisfaction can be regarded as one's perceptions, understanding and evaluation of their role and this view may be influenced by one's personal circumstances (Buitendach & Rothmann, 2009). Due to the subjective nature of job satisfaction, it is regarded as complex because different aspects of the work context may have a different impact on individuals (Buitendach & Rothmann, 2009; Sarker et al., 2003). Previous studies have shown that career adaptability does contribute to job satisfaction (Chan & Mai, 2015; Coetzee & Stoltz, 2015; Fiori et al., 2015). One of these studies investigated the positive effect of career adaptability on job satisfaction and findings suggest that career adaptability could be a self-regulatory skill that may support individuals when faced with obstacles and challenges in the workplace (Fiori et al., 2015). Additionally, another study examined how career adaptability is linked to employee satisfaction and the impact on retention of employees (Coetzee & Stoltz, 2015). While the study suggested that career adaptability was clearly linked to satisfaction levels, the study was limited to a particular industry and encourages further longitudinal studies (Coetzee, Stoltz, 2015). These findings highlight the need to further understand career adaptability and how it contributes to job satisfaction across industries in the post-COVID 19 workplace.

Additionally, studies have indicated a relationship between career adaptability and self-regulation (Creed et. al., 2009; Merino-Tejedor et. al., 2016). However, no current research examining a potential relationship between career agility and job satisfaction could be found. Similarly, no research exploring a potential relationship between self-regulation and career agility could be established. There is equally an academic and practical need for further

investigation into these constructs (Coetzee et al., 2020; Johnston, 2018). The impact of these factors for the worker and the wider organisational context is evident and necessitates further investigation. Therefore, this study aimed to generate initial research with regard to the relationship between career agility, self-regulation and job satisfaction through career adaptability.

The career adaptability construct addresses the resources an individual requires when confronted with a transition, change or unpredictability (Savickas, 1997, 2002). However, to deal effectively with change, an individual needs to manage their behavioural response to such change. This means that an individual needs to draw on resources to self-regulate, which refers to “the ability to monitor behaviour, to contrast it with reference values and to introduce adjustments where necessary” (Potgieter & Botha, 2009, p. 321). An individual cannot adapt effectively to their environment without self-regulation (Potgieter & Botha, 2009). The above-mentioned career adaptability resources (concern, control, curiosity, confidence) are described as self-regulation assets that can be utilised when facing unknown situations or transitions, change and unpredictability (Johnston, 2018; Savickas & Porfeli, 2012). Self-regulation is key as it determines if an individual will address change in a positive or negative manner (Coetzee et al., 2020). While existing literature has established the key role that self-regulation plays in career adaptability, the relationship with career agility is unknown (Coetzee et al., 2020; Savickas 1997, 2002, 2013). Career agility requires the triggering of adaptability resources to effectively deal with change which would require self-regulation. This may inform interventions for enhancing career agility. Therefore, this study aimed to examine the relationship between career agility and self-regulation (if any). Overall, limited studies are available with regard to the career agility as an antecedent to career adaptability (Coetzee et al., 2020), especially with regard to the impact of the COVID-19 pandemic. Similarly, limited assessments and tools are available to assist the workforce in negotiating this dynamic world of work (Coetzee et al., 2021).

1.2 Research Objectives

1.2.1 General objective

The general objective of this research was to investigate the psychometric properties of the Career Agility Scale in a sample of South African employees.

1.2.2 Specific objectives

The specific objectives were:

- To establish how career agility, career-adaptability, job satisfaction and self-regulation are conceptualised according to the literature.
- To establish if the Career Agility Scale is valid and reliable in the South African context, as well as establish the following:
  - Acceptable Cronbach alpha and composite reliability coefficients.
  - Criterion validity, i.e. the relationships between career agility, career adaptability, self-regulation and job satisfaction.
  - Factorial validity.
  - Convergent validity.
  - Discriminant validity.
- To determine the relationship between career agility, career adaptability and job satisfaction.
- To determine the relationship between career agility, career adaptability and self-regulation.
- To provide recommendations for future research and practice as well as identify potential limitations of the study.

1.2.3 Research hypotheses

H1: The Career Agility Scale consists of three factors.

H2: The Career Agility Scale shows acceptable internal consistency (reliability).

H3: The Career Agility Scale shows acceptable convergent validity.

H4: Career agility shows acceptable discriminant validity.

H5: Career agility has a positive relationship with career adaptability.

H6: Career agility has a positive relationship with self-regulation.

H7: Career agility has a positive relationship with job satisfaction.

H8: Career agility has an indirect relationship to self-regulation through career adaptability.

H9. Career agility has an indirect relationship to job satisfaction through career adaptability.

Figure 1 below demonstrates the proposed research model. The dash-lined variables suggest potential relationships for the indirect hypotheses for H8 and H9.

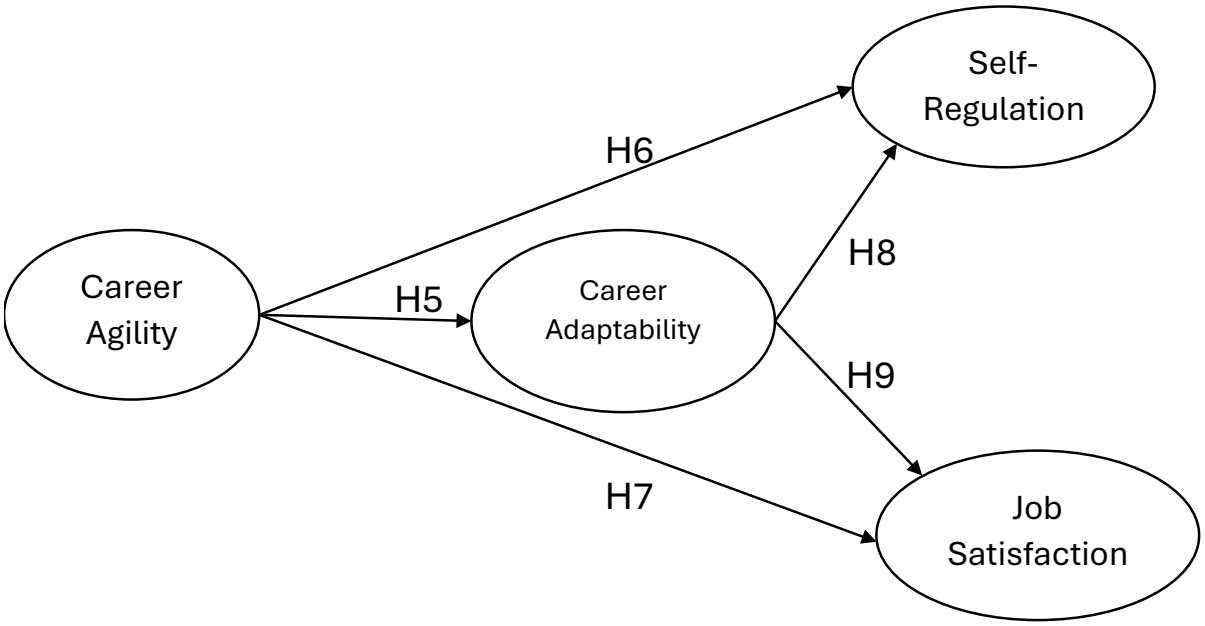

Figure 1

The proposed model of the study

1.3 Research Design

1.3.1 Research approach

A quantitative research design was used in this study. Quantitative research involves the objective measurement of psychological phenomena which can be achieved using psychometric assessments, questionnaires, and surveys (Bryman, 2012; Trochim et al., 2016). The data and information collected are represented numerically and can subsequently be analysed (Bryman, 2012). Typically, the aim of quantitative research is to describe these phenomena and generalise these findings to a wider population (Neuman, 2014). Ultimately, a quantitative research study involves the examination of "a language of variables and relationships among variables" (Neuman, 2014, p. 180).

This research study examined the relationships between several career-related variables, including career agility, career adaptability, job satisfaction and self-regulation. Prior to collecting data, the variables had to be identified and defined, and the potential relationships specified to develop the study's hypotheses (Babbie, 2016; Stockemer, 2019). Hypotheses

regarding the relationships amongst these variables were proposed, data were collected, and the hypotheses tested through statistical analysis (Neuman, 2014; Stockemer, 2019). This research design enabled the investigation of career agility and other career-related variables, proposed relationships between these variables as well providing generalisations and predictions to the wider organisational context (De Vos et al., 2011).

Therefore, this study utilised a cross-sectional survey design. By employing this research design, the researcher could make observations about a sample or cross-section of a population or phenomenon at a specific point in time (Babbie, 2016). Cross-sectional research design presents several advantages, including reduced costs, collection of data from different individuals and suitability for examining the relationship amongst variables, such as career agility and other career-related variables (Babbie, 2016; Bryman, 2012). Additionally, cross-sectional survey design is currently commonly used for the validation of assessments (Arafat, 2016). Therefore, a cross-sectional research design was suitable to investigate the psychometric properties of the CAS.

1.4 Research Method

1.4.1 Literature review

An extensive review of the relevant and applicable literature and data on the keywords: career agility, career adaptability, job satisfaction and self-regulation between 2000 and 2025 was conducted by the researcher. The services offered by the university's Library (Potchefstroom Campus) were utilised where applicable. Relevant literature and data were acquired through various electronic databases and search engines, including EBSCOhost, Emerald Insight Journals, ScienceDirect, Google Scholar and Researchgate. The following journals were included in this literature search, for example: *SA Journal of Human Resource Management, Journal of Vocational Behavior, Addictive Behaviors, African Journal of Career Development, The Career Development Quarterly, SA Journal of Industrial Psychology, Frontiers in Psychology, Educational and Psychological Measurement, Journal of Career Assessment, Journal of Psychology in Africa, International Journal of Educational Vocational Guidance, Journal of Psychology in Africa, Journal of Managerial Psychology, Career Development International, Journal of Psychological Assessment, International Journal of Medical Science and Public Health* and *Journal of Organisational Behaviour*. Further sources of applicable information were included, as well as additional scientific journals.

1.4.2 Research participants

The study focused on working individuals within the South African context. Non-probability sampling was utilised which did not apply a formal statistical approach but rather specified criteria that should be met by participants (Babbie, 2016; Neuman, 2014). To support the outcomes of this study, purposive sampling was utilised. Purposive sampling facilitates the drawing of a sample that is as representative as possible of the population while meeting specific criteria set by the researcher (Babbie, 2016). For the purposes of this study, the following criteria had to be met: participants were at least 18 years old, were employed, and demonstrated at least a Grade 12 secondary school qualification to ensure they were able to understand the questionnaires sufficiently. Language remains a key issue with regard to assessments in the South African context and thus a candidate should only be assessed in a language where they displayed the required level of proficiency (Foxcroft & Roodt, 2013). Ideally, the sample for this study should consist of approximately 300 participants (Tabachnick & Fidell, 2014). Furthermore, diversity in terms of gender, ethnicity, industry sector and job level was supported through the proposed sampling technique. Participation in this research study was voluntary.

1.4.3 Measuring instruments

Biographical information: A short biographical questionnaire had to be completed by all participants in the study prior to the completion of the additional sections. Information regarding gender, ethnicity, age, language, educational qualification, industry sector and job level was collected. This is in line with requirements set out by the American Psychological Association (APA, 2008). The biographical information collected allowed the composition of the sample to be described.

Career Agility Scale: The newly developed CAS, designed by Coetzee et al. (2020), measures career agility through three constructs, which include technological adaptivity, agile learning and career navigation (Coetzee et al., 2020). Overall, there are 14 items and participants answer according to a seven-point Likert-type scale ranging from strongly disagree to strongly agree (Coetzee et al., 2020). Technological adaptivity has seven items, such as ‘I search for job roles that evolve with changing technological conditions because they offer opportunities for growth and creativity’ (Coetzee et al., 2020). Agile learning comprises five items (such as ‘I continually search for opportunities to learn new skills that will improve my career and job success’) and career navigation consists of six items (for example, ‘I am able to navigate and adapt to change and uncertainty in my job and career environment’) (Coetzee et al., 2020). Initial research for the CAS suggests that there is construct validity and

high internal consistency reliability (α = 0.90) (Coetzee et al., 2020). Additionally, the results for the internal consistency reliability ranged from 0.73 to 0.89 for the subscales (Coetzee et al., 2020).

Career Adaptability: The Career Adapt-Abilities Scale-Short Form (CAAS-SF) was used in this research study to examine career adaptability and was designed by Maggiori et al. (2017). It comprises 12 items, with four dimensions and three items relating to each dimension. The four dimensions of the CAAS-SF include the following: concern, control, curiosity, and confidence (Maggiori et al., 2017). Examples of the items include 'Preparing for the future' (concern), 'Making decisions by myself' (control), 'Observing different ways of doing things' (curiosity) and 'Working up to my ability' (confidence) (Maggiori et al., 2017). These items are rated according to a five-point Likert-type scale which ranges from not a strength to greatest strength (Maggiori et al., 2017). The overall career adaptability scores were found to be acceptable (between 0.73 and 0.88) and the internal consistency scores for the dimensions were satisfactory (between 0.63 and 0.94) (Maggiori et al., 2017).

Job Satisfaction: Job satisfaction was assessed using a three-item scale (α = .86) that was developed for a study that examined the effects of job perceptions and job satisfaction on an employee's desire to leave their job (Hellgren et al., 1997). Three items were used: "I enjoy being at my job", "I am content with the job that I have", and "I am satisfied with my job". Participants answered according to a five-point Likert-type scale ranging from strongly disagree (1) to strongly agree (5).

Self-Regulation: The Short Self-Regulation Questionnaire (SSRQ) was utilised to assess self-regulation, which consists of 31 items (Carey et al., 2004; Potgieter & Botha, 2009). The initial Self-Regulation Questionnaire consisted of 63 items which load onto seven factors whereas the SSRQ has 31 items that load onto a single factor (Carey et al., 2004; Potgieter & Botha, 2009). The items are rated by the participants using a five-point Likert-type scale ranging from Strongly disagree to Strongly agree. Items include 'I have trouble making plans to help me reach goals' and 'As soon as I see a problem or challenge, I start looking for possible solutions' (Carey et al., 2004). The overall Cronbach's alpha coefficients for the SSRQ were found to be acceptable at .92 (Carey et al., 2004).

1.4.4 Research procedure

Prior to commencing with this research project, approval was sought from the Scientific Committee and the Faculty of Economic and Management Science's Research Ethics Committee of the North-West University (NWU EMS-REC) by the researcher. Once approval

was granted, the researcher began with the data collection. This involved two data collection processes that were implemented simultaneously. Initially, the researcher engaged with the South African office of a global professional services organisation to obtain permission to collect data from their employees. The researcher contacted the appropriate Human Resources employee and the Legal Department of the organisation to provide further information regarding the study and to determine if it would be possible for the voluntary participation of the employees. A formal email was compiled which provided detailed information on the study and included pertinent information such as the research objectives, participant requirements, confidentiality of the assessment results, the assessment procedure, and wider benefits of the study. This email was followed up by a formal discussion with the Legal Department and Managing Director of the South African office to answer their additional questions and provide them with drafts of the communication templates, permission from the University's applicable Ethics committees and the survey. Once permission was received from both the Legal Department and the Managing Director to collect data, a company representative who was not in a position of power sent out an email containing the relevant information regarding the study to all members of the organisation, as well as the hyperlink to complete the surveys should the participants choose to do so. As the researcher was an employee of this organisation, she had access to the email addresses of the potential participants. The email to potential participants included the relevant information which specified the objectives and goals of the study, the amount of time required to participate in the study, the voluntary nature of the study, any pertinent benefits and risks of participating in the study as well as clarity regarding confidentiality and privacy. Participants provided consent to be part of the research project once they decided to proceed with the questionnaires. This information was captured and presented to participants on the assessment website (QuestionPro). Informed consent covered aspects such as voluntary participation, how to withdraw from the study and confidentiality. The completion of the online assessments was expected to take approximately 20 minutes. Participants who agreed to participate in the study had three weeks to complete the assessments electronically.

The second process involved various social media platforms such as Facebook, Instagram and LinkedIn which were utilised to collect data from as many participants as possible. An appropriate post containing the link to the survey website was displayed on the listed social media platforms. These were posted regularly (approximately once a week) on the platforms for a period of five to six months to drive participation. Potential participants received the relevant information when clicking on the post, which included the objectives and goals of the study, the amount of time required to participate in the study, the voluntary nature of the study,

any pertinent benefits and risks of participating in the study, as well as clarity regarding confidentiality and privacy. Informed consent covered aspects such as voluntary participation, how to withdraw from the study and confidentiality. This information was captured and presented to participants on the assessment website (QuestionPro). The researcher's contact details were included in the email and assessment website should participants have had any questions. The ethics approval details for the research study were included. The completion of the online assessments should have taken approximately 20 minutes.

The data was collected through the survey software (QuestionPro) and downloaded and stored securely in a password-protected file on a computer hard drive. In line with the ethical guidelines and informed consent, only the researcher and researcher's supervisors had access to the data (Foxcroft & Roodt, 2013). Once data collection was complete, the statistical analysis was conducted. All information remained securely stored and was only accessed by the researcher and the research supervisors.

1.4.5 Statistical analysis

The researcher utilised various statistical methods and programmes to support the study's objectives. To calculate the Cronbach's alpha reliability and composite coefficients for career agility and other career-related constructs, Jeffrey's Amazing Statistics Program (JASP) (Version 0.14.1) computer software was utilised. Latent variable modelling was conducted through the statistical programme, Mplus 8.6 (Muthén & Muthén, 2021). Confirmatory Factory Analysis (CFA) was utilised to evaluate psychometric scales, examine construct validity as well as assess method effects and measurement invariance (Brown, 2015; Harrington, 2009). For the purposes of this study, CFA was used to examine model fit to the data. Furthermore, this assisted in investigating the factorial validity of career agility through the application of the following measures and respective values; chi-square value (lowest - best-fitting model), the comparative fit index (CFI ≥ 0.90), Tucker-Lewis index (TLI ≥ 0.90), the root square error of approximation (RMSEA ≤ 0.08) and the standardised root mean square residual (SRMR ≤ 0.08) (Harrington, 2009; Hooper et al., 2008; Van de Schoot et al., 2012;). An exploratory structural equation modelling (ESEM) approach was also applied, allowing small, theoretically defensible cross-loadings rather than the strict zero-cross-loading constraints imposed by CFA. This flexibility reduces artificially inflated factor correlations and offers a more accurate representation of the scale's dimensional structure ESEM has become an important advancement in SEM because it effectively accounts for wording, contextual and method effects that can influence how items function (Asparouhov & Muthén, 2009).To evaluate the

proposed relationship between the variables, a correlation matrix was utilised. Cohen (1992) advises that effect sizes are to be considered practically significant when r > 0.30-0.49 (medium effect), and r > 0.49 (large effect). Additionally, the discriminant validity between career agility and other career-related variables was investigated. However, it was noted that for acceptable discriminant validity to be established, correlations between the relevant constructs would have to be around 0.85 or below (Brown, 2015).

Lastly, as part of the SEM process, a structural model was created by specifying the structural paths based on the research hypotheses (see Figure 1). Additionally, the significance, direction, and size of the standardised beta coefficients (β) were interpreted. Parameters were deemed as statistically significant in this study at the 95% significance level ($p < 0.05$).

1.4.6 Ethical considerations

Several ethical considerations were incorporated and applied to this research study by the researcher. Key ethical principles included the following: respect for participants, autonomy, beneficence, non-maleficence and justice (Babbie, 2016). Comprehensive information regarding the research project was supplied to all participants via email to ensure that they were able to make informed decisions individually as to whether they would participate or not. The researcher provided the participating organisations with a detailed email regarding the research project which set out the purpose and advised that participation was voluntary. The researcher disseminated the email to potential participants in the organisation once permission was obtained from the Managing Director and Legal Department of the company. All personal data was restricted and kept confidential and only the relevant parties (researcher and research supervisors) have access to the data as per the Protection of Personal Information (POPI) Act (Republic of South Africa, 2013). Similarly, individuals who accessed the research surveys link via online social media platforms for the research project were provided with the same information and could decide voluntarily if they wanted to participate.

Harm to participants in any way was avoided and any limitations or risks as a result of participation in the research study were communicated to the participants (Babbie, 2016; Strydom, 2011). The agreement or disagreement by an individual to participate in the research project will be kept confidential to ensure that no harm, risk or penalty is experienced due to their choice. This was supported by ensuring that informed consent was obtained and information was clearly communicated and understood by all participants. Should a potential

participant choose to be part of the study, the requirements of participation were communicated and aspects concerning confidentiality, withdrawing from the study and voluntary participation were addressed. Furthermore, the autonomy and respect for the dignity of participants had to be upheld by ensuring their identities were anonymised and all information is kept confidential (Babbie, 2016). The relationship between the participants and researchers had to be characterised by trust, thus information could not be withheld or be incorrect (Strydom, 2011).

Finally, all concerns regarding ethics had to be supported by ethical decision-making (Strydom, 2011). The researcher consulted with the research supervisors should assistance be required. All data collected electronically is stored securely using password-protected files and was only accessed by the researcher and research supervisors. The data will be securely stored for five years. Should feedback be required, the researcher will provide feedback on the broad results of the study, ensuring that confidentiality is maintained. The research study only commenced once approval was received from the NWU EMS-REC.

1.5 Expected Contribution of the Study

1.5.1 Contribution to the organisation

The arrival of the 4IR, digitalisation and automation and the disruption due to the COVID-19 pandemic have resulted in organisations facing uncertainty and change (Hirschi, 2018; Stofile et al., 2023). As a result, employees have experienced a change in their roles and work requirements (Cammarosano et al., 2019; Hirschi, 2018). With the changing world of work and the speedy arrival of the 4IR, organisations have focused resources on ensuring that employees are equipped to meet the challenges. This has led to the adoption of continuous learning programmes specifically to address technology advancements which have impacted on the world of work (Sandford et al., 2020). Career agility supports this as it refers to an individual's ability to adapt and respond enthusiastically to change, specifically with regard to technology. Furthermore, while career adaptability has been recognised as a key psychological skill for the future world of work, little research on the antecedents of this have been explored; however, career agility has been identified as an antecedent to this and therefore plays a key role in enhancing employees' adaptability (Coetzee et al., 2020; Coetzee et al., 2021; Zhang et al., 2019). Career adaptability has been linked to positive organisational outcomes which include job attitudes, job satisfaction and work stress (Fiori et al., 2015;

Johnston 2018). Career agility has been proposed as contributing to overall career adaptability and subsequently may influence these aspects (Coetzee et al., 2020). By understanding what contributes to career agility, organisations could target specific areas to enhance an individual's capacity for career adaptability, further enhancing their ability to deal with the changing work environment. More information regarding career agility could assist the organisation in creating tailored development programmes. These individuals will respond more effectively to change, dealing with technological advancements and be more open to learning new skills (Coetzee et al., 2020). This in turn has an overall impact on how organisations respond to the impact of the 4IR, which includes significant change, new technology and the need to adapt to the future requirements of the new working world. Therefore, understanding career agility may assist in enhancing an organisation's response to change and future demands. This may include aspects such as compiling and updating policies and programmes related to training and development, as well as an updated competency framework.

1.5.2 Contribution to Industrial Psychology literature

There is limited formal research on the antecedents to career adaptability which has been identified as key skill for the future world of work (Johnston, 2018). Coetzee et al. (2020) recently developed the CAS which proposes that three dimensions (technological adaptivity, career navigation, agile learning) relate to career agility. As there is limited formal research on career agility as antecedent to career adaptability, this research initiates formal investigations into a recognised vital skill for the future world of work, specifically with regard to the impact of the 4IR on the world of work (Zhang et al., 2019). This contributes to the literature in conceptualising career agility, as well as furthering the understanding of what the antecedents of career adaptability are. However, further investigation is required in terms of the psychometric properties of the CAS. Subsequently, this would provide researchers with the opportunity to conduct additional research with a validated assessment almost two years after the emergence of the COVID-19 pandemic. Additionally, there is a lack of career-related assessments within the South African context and this assessment would contribute to the career development dimension to which Industrial and Organisational Psychologists contribute. Furthermore, this research investigated potential relations between career agility, career adaptability and self-regulation, as well as job satisfaction.

REFERENCES

Allen, K. S., Grelle, D., Lazarus, E. M., Popp, E., & Gutierrez, S. L. (2024). Hybrid is here to stay: Critical behaviors for success in the new world of work. *Personality and Individual Differences,* 217, 112459. https://doi.org/10.1016/j.paid.2023.112459

American Psychological Association (2008). Reporting standards for research in psychology. *American Psychologist, 63*(9), 839-851. http://www.apa.org/pubs/authors/jars.pdf

American Psychological Association (2020). *APA dictionary of psychology*. https://dictionary.apa.org/criterion-validity

Ammirato, S., Felicetti, A. M., Linzalone, R., Corvello, V., & Kumar, S. (2023). *Still our most important asset: A systematic review on human resource management in the midst of the fourth industrial revolution*. *Journal of Innovation & Knowledge, 8*(3). https://doi.org/10.1016/j.jik.2023.100403

Anwar, M. A. & Graham, M. (2021). Between a rock and a hard place: freedom, flexibility, precarity and vulnerability in the gig economy in Africa. *Competition & Change, 25*(2), 237-258. https://doi.org/10.1177/1024529420914473

Asparouhov, T., & Muthén, B. (2009). Exploratory structural equation modeling. *Structural Equation Modeling: A Multidisciplinary Journal, 16*(3), 397–438. https://doi.org/10.1080/10705510903008204

Arafat, S. M. (2016). Validation study can be a separate study design. *International Journal of Medical Science and Public Health, 5,* 2421-2422. https://doi.org/10.5455/ijmsph.2016.19042016471

Babashahi, L., Barbosa, C. E., Lima, Y., Lyra, A., Salazar, H., Argôlo, M., Almeida, M. A., & de Souza, J. M. (2024). AI in the workplace: A systematic review of skill transformation in the industry. *Administrative Sciences, 14*(6), 127. https://doi.org/10.3390/admsci14060127

Babbie, E. R. (2016). *The practice of social research* (14th ed). Cengage Learning.

Bennett, N , & Miles, S. A. (2010). *Your career game: How game theory can help you achieve your professional goals.* Stanford Business Eurospan distributor. https://libugent be/en/catalog/rug01:001432319

Beqiri, T., & Mazreku, I. (2020). Lifelong learning, training and development employee's perspective. *Journal of Educational and Social Research*, *10*(2), 94.

Boccoli, G., Tims, M., Gastaldi, L., & Corso, M. (2024). The psychological experience of flexibility in the workplace: How psychological job control and boundary control profiles relate to the wellbeing of flexible workers. *Journal of Vocational Behavior*, 144, 103833. https://doi.org/10.1016/j.jvb.2024.104059

Brown, T. A. (2015). *Confirmatory factor analysis for applied research* (2nd ed.). Guilford Press.

Bryman, A. (2012). *Social research methods* (4th ed.). Oxford University Press.

Buitendach, J.H., & Rothmann, S. (2009). The validation of the Minnesota Job Satisfaction Questionnaire in selected organisations in South Africa. *SA Journal of Human Resource Management/SA Tydskrif vir Menslikehulpbronbestuur, 7*(1), Art. #183, https://doi.org/10.4102/sajhrm.v7i1.183

Cammarosano, M., Melo-Silva, L. L., & Oliveira, J. E. B. (2019). Validity evidence of the CAAS in Brazilians with higher education. *Scientific Electronic Library Online, 42*(2), 287-298. https://doi.org/10.1590/1413-82712019240206

Carey, K. B., Neal, D. J. & Collins, S. E. (2004). A psychometric analysis of the self-regulation questionnaire. *Addictive Behaviors, 29,* 253-260.

Chan, S. H. J., & Mai, X. (2015). The relation of career adaptability to satisfaction and turnover intentions. *Journal of Vocational Behavior*, 89, 130-139. https://doi.org/10.1016/j.jvb.2015.05.005

Chatterjee, S., Chaudhuri, R., Vrontis, D., & Giovando, G. (2023). Digital workplace and organization performance: Moderating role of digital leadership capability. *Journal of Innovation & Knowledge, 8*(1). https://doi.org/10.1016/j.jik.2023.100334

Chen, Q., Li, J., Shen, R., Wang, R., Xu, J., & Zhou, J. (2024). Career adaptability and work engagement: The roles of person–organization fit and job insecurity. *BMC Psychology, 12*, Article 562. https://doi.org/10.1186/s40359-024-01907-2

Coetzee, M., & Stoltz, E. (2015). Employees' satisfaction with retention factors: Exploring the role of career adaptability. *Journal of Vocational Behavior*, *89*, 83–91. https://doi.org/10.1016/j.jvb.2015.04.012

Coetzee, M., Bester, M.S., Ferreira, N., & Potgieter, H. (2020). Facets of career agility as explanatory mechanisms of employees' career adaptability. *African Journal of Career Development*, *2*(1). https://doi.org/10.1080/14330237.2021.1952725

Coetzee, M., Ferreira, N., & Potgieter, H. (2021). Assessing the construct validity of the Career Agility Scale for measuring adult workers' digital era adaptive readiness. *Journal of Psychology in Africa*, *31*(4), a11. https://doi.org/10.4102/ajcd. v2i1.11

Cohen, J. (1992). A power primer. *Psychological Bulletin*, *112*(1), 155-159.

Creed, P. A., Fallon, T. & Hood, M. (2009). The relationship between career adaptability, person and situation variables, and career concerns in young adults. *Journal of Vocational Behavior, 89,* 219-229. https://doi.org/10.1016/j.jvb.2008.12.004

De Stefano, V. (2016). *The rise of the "just-in-time workforce": On-demand work, crowdwork and labour protection in the "gig-economy"* (Conditions of Work and Employment Series, (No. 71). International Labour Office.

De Vos, A. S., Strydom, H., Fouché, C. B., & Delport, C. S. L. (2011). *Research at grass roots: For the social sciences and human service professions* (4th ed.). Van Schaik Publishers.

Derrick, J., Willems, T., & Poon, K. W. (2022). Researching informal workplace learning in the context of remote working in the post-COVID-19 world. *Hungarian Educational Research Journal*, 12(4), 445-459. https://doi.org/10.1556/063.2021

Ferreira, C., Robertson, J., & Pitt, L. (2023). Business (un)usual: Critical skills for the next normal. *Thunderbird International Business Review*, *65*(1), 39–47. https://doi.org/10.1002/tie.22276

Fiori, M., Bollman, G., & Rossier, J. (2015). Exploring the path through which career adaptability increases job satisfaction and lowers job stress: The role of affect. *Journal of Vocational Behaviour, 91,* 113-121. https://doi.org/10.1016/j.jvb.2015.08.010

Foxcroft, C., & Roodt, G. (2013). *Introducing psychological assessment: In the South African context* (4th ed.). Oxford University Press.

Frey, C. B., & Osborne, M. A. (2017). The future of employment: How susceptible are jobs to computerisation? *Technological Forecasting and Social Change, 114*, 254–280. https://doi.org/10.1016/j.techfore.2016.08.019

Ghislieri, C., Molino, M. & Cortese, C. G. (2018). Work and organizational Psychology looks at the fourth industrial revolution: How to support workers and organizations? *Frontiers in Psychology, 9,* 2365. https://doi.org/10.3389/fpsyg.2018.02365

Giulioni, J. W. (2021). Introducing the Notion of Career Agility to the World of Solopreneurship https://www.juliewinklegiulioni com/blog/career-matters/introducing-thenotion-of-career-agility-to-the-world-of-solopreneurship/

Gubler, M., Arnold, J. & Coombs, C. 2013. Reassessing the protean career concept: Empirical findings, conceptual components, and measurement. *Journal of Organizationall Behavior, 35,* S23-S40. https://doi.org/10.1002/job.1908

Hair, J. F., Black, W. C., Babin, B. J., & Andersen, R. E. (2014). *Multivariate data analysis* (7th ed.). Pearson.

Harrington, D. (2009). *Confirmatory factor analysis*. Oxford University Press.

Hellgren, J., Sjoberg, A., & Sverke, M. (1997). Intention to quit: Effects of job satisfaction and job perceptions. In F. Avallone, J. Arnold, & K. de Witte (Eds.), *Feelings work in Europe* (pp. 415-423). Guerini.

Hirschi, A. (2018). The fourth industrial revolution: Issues and implication for career research and practice. *The Career Development Quarterly, 66*(3), 192-204. https://doi.org/10.1002/cdq.12142

Hirschi, A., Herrmann, A., & Keller, A.C. (2015). Career adaptivity, adaptability and adapting: A conceptual and empirical investigation. *Journal of Vocational Behavior, 87*, 1-10. https://doi.org/10.1016/j.jvb.2014.11.008

Hooper, D., Coughlan, J., & Mullen, M. R. (2008). Structural Equation Modelling: Guidelines for Determining Model Fit. *The Electronic Journal of Business Research Methods*, 6, 53-60.

Ivaldi, S., Scaratti, G., & Fregnan, E. (2022). Dwelling within the fourth industrial revolution: Organizational learning for new competences, processes and work cultures. *Journal of Workplace Learning*, *34*(1), 1–26. https://doi.org/10.1108/JWL-07-2020-0127

JASP Team (2020). JASP (Version 0.14.1) [Computer software].

Johnston, C.S. (2018). A systematic review of the career adaptability literature and future outlook. *Journal of Career Assessment*, *26*(1), 3-30. https://doi.org/10.1177/1069072716679921

Kipper, L. M., Iepsen, S., Dal Forno, A. J., Frozza, R., Furstenau, L., Agnes, J., & Cossul, D. (2021). Scientific mapping to identify competencies required by Industry 4.0. *Technology in Society, 64*, 101454. https://doi.org/10.1016/j.techsoc.2020.101454

Konstant, M. (2020). Career agility for the future of your work. Networlding. https://networlding.com/career-agility-for-the-future-of-your-work/

Kumi, E., Osei, H.V., Asumah, S., & Yeboah, A. (2024). The impact of technology readiness and adapting behaviours in the workplace: A mediating effect of career adaptability. *Future Business Journal, 10*(1), 63. https://doi.org/10.1186/s43093-024-00355-z

Li, L. (2022). *Reskilling and Upskilling the Future-ready Workforce for Industry 4.0 and Beyond*. Information Systems Frontiers. https://doi.org/10.1007/s10796-022-10308-y

Maggiori, C., Rossier, J., & Savickas, M. L. (2017). Career adapt-abilities scale short form (CAAS-SF): construction and validation. *Journal of Career Assessment, 25*(2), 312-325. https://doi.org/10.1177/1069072714565856

Maunula, M., Maunumäki, M., & Lähdesmäki, S. (2024). The connection between mentoring, continuous learning and sustainability. *Athens Journal of Education*, *11*(1), 1-19. https://doi.org/10.30958/aje.X-Y-Z

Mayer, C.-H. (2024). Leaders' views on leadership and skills development in the Fourth Industrial Revolution. *SA Journal of Industrial Psychology, 50*, Article a2172. https://doi.org/10.4102/sajip.v50i0.2172

Mehta, P. & Walunjkar, A. (2021). *Future of learning in the wake of COVID-19.* Deloitte. https://www2.deloitte.com/content/dam/Deloitte/in/Documents/human-capital/in-hc-future-of-learning-in-the-wake-of-COVID-19-noexp.pdf

Merino-Tejedor, E., Hontangas, P. M. & Boada-Grau, J. (2016). Career adaptability and its relation to self-regulation, career construction, and academic engagement among Spanish university students. *Journal of Vocational Behavior*. 93. https://doi.org/10.1016/j.jvb.2016.01.005

Muthén, L. K., & Muthén, B. O. (2021). *Mplus user's guide* (8th ed.). Muthén & Muthén.

Muzam, J. (2023). The Challenges of Modern Economy on the Competencies of Knowledge Workers. *Journal of the Knowledge Economy, 14*, 1635–1671. https://doi.org/10.1007/s13132-022-00979-y

Neuman, W. L. (2014). *Social research methods: Qualitative and quantitative approaches* (7th ed.). Pearson.

Oosthuizen, R. M. (2022). The Fourth Industrial Revolution – Smart Technology, Artificial Intelligence, Robotics and Algorithms: Industrial Psychologists in Future Workplaces. *Frontiers in Artificial Intelligence*, *5.* https://doi.org/10.3389/frai.2022.913168

Potgieter, J. C., & Botha, K. F. H. (2009). Psychometric properties of the short self-regulation questionnaire (SSRQ) in a South African context. *Journal of Psychology in Africa, 19*(3), 321-328.

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior, Research Methods, Instruments & Computers, 36*(4), 717-731.

Republic of South Africa (2013). Protection of Personal Information Act, No. 4 of 2013. https://www.gov.za/sites/default/files/gcis_document/201409/3706726-11act4of2013popi.pdf

Rikala, P., Braun, G., Järvinen, M., Stahre, J., & Hämäläinen, R. (2024). Understanding and measuring skill gaps in Industry 4.0. *Technological Forecasting and Social Change,* 201, 123206. https://doi.org/10.1016/j.techfore.2024.123206

Sandford, G., Woods, K., Hamel, E., Tulumello, P. & Grewal, J. (2020). *Is your workforce future ready? How lifelong learning can help build the skills and capabilities to thrive tomorrow?* Deloitte. https://www2.deloitte.com/content/dam/Deloitte/ca/Documents/is-your-workforce-future-ready-en-AODA.pdf

Sarker, S.J., Crossman, A., & Chinmeteepituck, P. (2003). The relationships of age and length of service with job satisfaction: An examination of hotel employees in Thailand. *Journal of Managerial Psychology, 18*, 745–758.

Savić, A. & Dobrijevic, G. (2022). The impact of the COVID-19 pandemic on work organization. *The European Journal of Applied Economics*. *19*(1). 1-15. https://doi.org/10.5937/EJAE19-35904.

Savickas, M. L. (1997). Career adaptability: An integrative construct for life-span, life-space theory. *The Career Development Quarterly, 45*(3), 247-259. https://doi.org/10.1002/j.2161-0045.1997.tb00469.x

Savickas, M. L. (2002). Career construction: A developmental theory of vocational behavior. In D. Brown (Ed.), *Career choice and development* (4th ed., pp. 149-205). Jossey-Bass.

Savickas, M. L. (2013). The theory and practice of career construction. In Brown, S. D., & Lent, R. W. (Ed.), *Career development and counselling: Putting theory and research to work* (2nd ed., pp. 147-183). John Wiley & Sons.

Savickas, M. L., & Porfeli, E. J. (2012). Career Adapt-Abilities Scale: Construction, reliability and measurement equivalence across 13 countries. *Journal of Vocational Behavior*, *80*(3), 661-673. https://doi.org/10.1016/j.jvb.2012.01.011

Schmidtner, M., Doering, C., & Timinger, H. (2021). *Agile working during COVID-19 pandemic.* IEEE. https://doi.org/10.1109/EMR.2021.3069940

Shet, S. V. (2024). A VUCA-ready workforce: Exploring employee competencies and learning and development implications. *Personnel Review, 53*(3), 674-703. https://doi.org/10.1108/PR-10-2023-0873

Sima, Violeta, Gheorghe, Ileana, Subić, Jonel, & Nancu, Dumitru. (2020). Influences of the Industry 4.0 Revolution on the Human Capital Development and Consumer Behavior: A Systematic Review. *Sustainability*, 12, 4035. https://doi.org/10.3390/su12104035

Stockemer, D. (2019). *Quantitative methods for the social sciences: A practical introduction with examples in SPSS and Stata*. Springer International Publishing.

Stofile, P., de Braine, R., & Dhanpat, N. (2023). Experiencing work in the fourth industrial revolution: a qualitative study on work identity and new ways of work. *EUREKA: Social and Humanities,* (4), 3-12. https://doi.org/10.21303/2504-5571.2023.002955

Strydom, H. (2011). Ethical aspects of research in the social sciences and human service professions. In A. S. De Vos, H. Strydom, C. B. Fouché, & C. S. L. Delport (Eds.), *Research at grass roots: For the social sciences and human service professions* (4th ed., pp. 113-129). Van Schaik Publishers.

Tabachnick, B., & Fidell, L. (2014). *Using multivariate statistics* (6th ed.). Pearson Education.

Trochim, W. M., Donnelly, J. P., & Arora, K. (2016). *Research methods: The essential knowledge base* (2nd ed.). Cengage Learning.

University of British Columbia (UBC). (2020). *What is career agility and why do you need it?* Alumni UBC. https://www.alumni.ubc.ca/2017/blog/careers-blog/career-agility-need/

University of West Alabama Online (UWA Online). (2017). Why is continuous learning important? https://online.uwa.edu/news/continuous-learning-important/

Van de Schoot, R., Lugtig, P., & Hox, J. (2012). A checklist for testing measurement invariance. *European Journal of Developmental Psychology*, *9*(4), 486-492. https://doi.org/10.1080/17405629.2012.686740

Woods, K., Hall, R., Hamel, E., Harrington, S., & Tulumello, P. (2021). *Building the future-ready workforce: Unleash the potential your organization and people.* Deloitte. https://www2.deloitte.com/ca/en/pages/consulting/articles/future-ready-workforce.html

World Economic Forum. (2025, January). *The Future of Jobs Report 2025*. World Economic Forum. https://www.weforum.org/reports/the-future-of-jobs-report-2025/

Zhang, Wenguang, Guan, Xiaoyu, Zhou, Xueqin, & Lu, Ji. (2019). The effect of career adaptability on career planning in reaction to automation technology. *Career Development International*. 24. https://doi.org/10.1108/CDI-05-2018-0135

CHAPTER 2

RESEARCH ARTICLE

INVESTIGATING THE PSYCHOMETRIC PROPERTIES OF THE CAREER AGILITY SCALE IN A SAMPLE OF SOUTH AFRICAN EMPLOYEES

Orientation: Career agility has emerged as a new construct that can assist individuals, leaders and organisations in effectively managing the changing work environment as a result of the COVID-19 pandemic and the rapid technological advancement brought on by 4IR. Limited research into the Career Agility and respective measurement scales currently exist. As a result of the limited research on career agility, organisations, managers and employees are unable to assess and leverage their respective career agility.

Research purpose: To investigate the psychometric properties of the Career Agility Scale in a sample of South African employees.

Motivation for the study: Career agility is a relatively new construct with limited research at both a global and national level. The CAS was recently designed to assess an employee's career agility however limited research into its validity and reliability exist. Currently, no other psychometric assessments are known to assess career agility. As a result, further investigation into the psychometric properties of the CAS is required. A sound psychometric assessment can assist employees, researchers and organisations in determining the role of career agility and its impact within the South African context.

Research design, approach, and method: This quantitative study utilised a cross-sectional research approach within the South African context and purposive sampling (*n* = 269) was employed. Research concentrated on determining the factor structure, criterion validity, convergent validity, discriminant and the overall validity of the CAS. Furthermore, reliability constructs were also investigated in the study.

Main findings: The study validated the Career Agility Scale (CAS) in a South African employee sample (n = 269), confirming a three factor structure of Technological Adaptivity, Agile Learning and Career Navigation. The ESEM model provided an acceptable and theoretically coherent fit, and all scales showed satisfactory reliability. Convergent and discriminant validity were largely supported. Career agility showed a strong positive relationship with career adaptability, and both constructs were positively related to self-regulation and job satisfaction at the correlational level. In the structural model, career agility significantly predicted career adaptability and job satisfaction, while career adaptability significantly predicted self-regulation. Career agility did not directly predict self-regulation, and career adaptability did not directly predict job satisfaction. Mediation analyses indicated that

career agility indirectly enhanced self-regulation through higher adaptability, while the indirect effect on job satisfaction through adaptability was significant but negative, suggesting a more complex pattern for this outcome.

Practical/Managerial Implications: The findings suggest that the CAS can be utilised in South African organisations to assess key facets of career agility, namely technological adaptivity, agile learning and career navigation. This positions the CAS as a useful tool for HR and learning and development functions to inform talent management, leadership development and change readiness initiatives. Interventions that build agile learning, career navigation and adaptability resources (concern, control, curiosity and confidence) may improve employees' ability to cope with ongoing change and maintain satisfaction at work. However, the negative indirect effect of adaptability on job satisfaction underscores the need to pair adaptability development with clear career paths, meaningful growth opportunities and supportive leadership so that highly adaptable employees can respond constructively to perceived misfit rather than simply becoming less satisfied in their current roles.

Contribution/Value-add: The research contributes to the limited South African literature on career agility by providing evidence of a reliable and valid measurement instrument. In doing so, it advances understanding of individual and organisational career outcomes and offers a tool that can be confidently used by managers and researchers to assess career agility and related adaptive resources in contemporary work environments.

Keywords: Career adaptability, career agility, job satisfaction, reliability, self-regulation, validity, South African employees.

INTRODUCTION

The world of work is characterised by rapid technological advancement, digital transformation and ongoing economic and social volatility (Lim, 2023). These dynamics have been accelerated following the COVID 19 pandemic, fundamentally disrupting traditional career patterns and reducing the predictability of long-term career paths (Hite & McDonald, 2020; Lodi et al., 2020; Rudolph et al., 2021). Careers are increasingly nonlinear, dynamic and ambiguous, requiring individuals to assume greater responsibility for navigating change, acquiring new skills and sustaining employability over time (Coetzee et al., 2020). 19. In the South African context, these challenges are further intensified by high unemployment, persistent inequality, skills mismatches and organisational restructuring, all of which place

sustained pressure on employees to remain adaptable and competitive (Maree, 2020; Rasool, 2021). Within this context, psychological resources that enable proactive adaptation, self-regulation and future oriented career decision making have become increasingly important for sustaining effective career functioning in changing work environments (Hirschi, 2018; Rudolph et al., 2017; Savickas & Porfeli, 2012). This has highlighted the importance of career adaptability as one of these resources with career agility emerging as an additional key resource so investigate. Career agility reflects a forward-looking orientation that enables individuals to anticipate change, engage in continuous learning and reposition themselves in response to shifting career demands (Coetzee et al., 2020). While career adaptability refers to a set of psychosocial resources that support effective coping with career tasks, transitions and uncertainty (Savickas & Porfeli, 2012). Together, career agility and career adaptability capture complementary aspects of adaptive career functioning and have been linked to resilience, career success and positive adjustment in uncertain work environments (Akkermans & Kubasch, 2022; Johnston, 2022; Spurk et al., 2019

Alongside these adaptive career resources, job satisfaction and self-regulation remain central to understanding how people experience and respond to contemporary work demands. Job satisfaction reflects employees' cognitive and emotional evaluations of their work and broader organisational context, including the extent to which their roles meet personal needs, expectations and values (Aydogdu & Asikgil 2011; Judge et al., 2017). Judge et al., 2017). Self-regulation refers to the cognitive, motivational and behavioural processes through which individuals set goals, monitor their progress, adjust their actions and maintain effort in the face of obstacles (Carey et al., 2004). Growing evidence suggests that self-regulation enables individuals to activate and maintain adaptive resources such as agility and adaptability, which in turn contributes to favourable outcomes such as job satisfaction, wellbeing and sustained career engagement (Rossier et al., 2017; Xu & Savickas, 2022).

Despite growing interest in these constructs, limited empirical work has examined career agility within the South African context as well as globally, and very few studies have investigated its measurement properties. The Career Agility Scale (CAS) (Coetzee et al., 2020; Coetzee at al., 2021) provides a promising conceptual and empirical foundation, but it has limited validation studies among South African employees. Considering South Africa's distinctive socioeconomic landscape and evolving work environment, it is important to evaluate the reliability and validity of this instrument locally and to clarify how career agility relates to career adaptability, job satisfaction and self-regulation (Rasool, 2021).

The present literature review therefore focuses on four core constructs that underpin this study, namely career agility, career adaptability, job satisfaction and self-regulation. The sections that follow review the theoretical and empirical work on career agility and career adaptability, before turning to research that links career adaptability to job satisfaction and self-regulation. The aim is to establish a clear conceptual framework for understanding how these constructs interact and to highlight the need for robust, contextually appropriate assessment tools in the South African world of work.

Literature Review

Career agility

Career agility has recently attracted attention as an important capability that assists individuals to remain employable in dynamic and uncertain career landscapes. In research career agility has been conceptualised career as a proactive, future focused orientation toward career decision making that reflects an individual's readiness to anticipate change, embrace technological advancement, engage in continuous learning and reposition their career path as circumstances evolve (Coetzee et al., 2020). In this sense, career agility goes beyond simple flexibility and describes a more intentional and strategic way of responding to changing work requirements. As research is limited, operational definitions of career agility were not extensive.

Within the South African context, where many employees navigate unstable labour markets and organisational restructuring, career agility becomes particularly salient (Hirschi, 2018; Rasool, 2021). Agility can assist individuals to respond constructively to technological disruption, shifts in organisational strategy and evolving skill demands by actively seeking opportunities to reskill, expand their networks and align their competencies with emerging roles (Coetzee et al., 2020; Coetzee, 2021). It involves monitoring developments in the external environment, reevaluating career goals and taking deliberate action to maintain employability, which suggests a strong self-regulatory component (Akkermans & Kubasch, 2022; Coetzee, 2022).

Empirical research on career agility is still in an early phase. The Career Agility Scale (CAS) was developed to capture three identified facets of this construct: technological adaptivity, agile learning and career navigation (Coetzee et al., 2021). Technological adaptivity reflects a positive and solution focused response to technological change and a willingness to view new technologies as opportunities for growth (Coetzee et al., 2021. Agile learning refers to a

proactive stance toward learning, including continuous upskilling, seeking feedback and investing in personal development (Coetzee et al., 2021. Career navigation captures the tendency to explore, plan and adjust career pathways in response to uncertainty and change (Coetzee et al., 2021).

Subsequent studies have sought to investigate the role of career agility and career-related outcomes. One such study demonstrated the importance of career agility and career wellbeing as coping attributes for the modern career specifically within changing work environment characterised by digitalisation (Coetzee, 2021). Another study contributed to the emerging literature on career agility by providing initial empirical evidence of its relevance within value oriented psychological contract research, and by demonstrating the important moderating role of career embeddedness in shaping this relationship (Coetzee et al., 2022). Additionally, a further study provided evidence that career agility and psychological capital activated adaptability resources and promoted career resilience and satisfaction. The findings supported career construction theory and highlighted the value of career agility for enhancing adaptive career outcomes in organisational contexts (Coetzee et al., 2023). Nevertheless, most of this work has been exploratory and has relied on limited samples and constructs. There remains a clear need to validate measures of career agility across diverse occupational groups, cultural settings and labour market conditions and key career-related outcomes, particularly in South Africa where employees face ongoing change and uncertainty.

Measuring career agility

The CAS was developed to assess career agility as a multidimensional psychological resource relevant to contemporary, dynamic work environments. Unlike traditional career measures that emphasise stable career progression, the CAS was designed to capture individuals' proactive orientation towards learning, technological adaptation and career navigation under conditions of ongoing change (Coetzee et al., 2020). As the construct of career agility is relatively novel, the development of a psychometrically sound measurement instrument is critical for advancing both theory and practice (Coetzee et al., 2021). Due to the relatively recent focus on career agility limited research and assessments are available. The 14-item scale is divided into three dimensions, namely, technological adaptivity, agile learning and career navigation (Coetzee et al., 2020). Accordingly, the current study investigated the psychometric functioning of the CAS within a South African general working sample.

H1: The Career Agility Scale consists of three factors.

As the CAS has been recently developed limited psychometric validation studies are available and further research is recommended. The CAS consists of items representing three theoretically grounded dimensions, namely technological adaptivity, agile learning and career navigation (Coetzee et al., 2020). Two initial studies within the South African context found that the three factor model presented a good fit and strong values on Cronbach's alpha internal consistency reliability coefficients (Coetzee et al., 2020; Coetzee et al., 2021). This indicated that the CAS is a reliable, internally consistent measure within the South African context.

Hypothesis 2: The Career Agility Scale shows acceptable internal consistency (reliability)

The Career Agility Scale (CAS) was recently developed, and early validation work has therefore been limited. Initial South African studies supported a three factor structure comprising technological adaptivity, agile learning, and career navigation (Coetzee et al., 2020; Coetzee et al., 2021). These studies reported acceptable to strong internal consistency, with Cronbach alpha coefficients ranging from 0.75 to 0.92 for the overall scale, and subscale reliabilities of 0.83 for technological adaptivity, 0.81 for agile learning, and 0.83 for career navigation (Coetzee et al., 2020). Although these findings suggested that the CAS was an internally consistent measure, further independent psychometric validation was required, particularly to assess the robustness of the factor structure and reliability estimates across samples, which the present study addressed.

H3: The Career Agility Scale shows acceptable convergent validity.

Limited studies have investigated the convergent validity of the CAS. However initial research found satisfactory validity of the scale (Coetzee et al., 2020; Coetzee et al., 2021). Collectively, prior research provides consistent evidence that the CAS is a psychometrically sound instrument with acceptable reliability and construct validity. Validation evidence remains limited to a small number of studies, primarily within South African and related contexts. Further research is therefore warranted to further investigate the scale’s measurement properties across diverse samples and employment contexts.

H4: Career agility shows acceptable discriminant validity.

Evidence for discriminant validity of the CAS was previously supported, with the three subdimensions demonstrating moderate intercorrelations that remained within acceptable

thresholds, indicating that the factors represent related yet conceptually distinct facets of career agility (Coetzee et al., 2020; Coetzee et al., 2021). However, given that career agility is a relatively recent construct, the evidence remains limited, and further empirical research is required to strengthen conclusions regarding the distinctiveness of its dimensions across diverse contexts.

H5: Career agility has a positive relationship with career adaptability.

Career agility and career adaptability

Career adaptability is a more established construct that sits at the centre of Savickas's career construction theory. Savickas (1997) defines career adaptability as the readiness and resources individuals use to cope with both predictable tasks, such as preparing for and participating in work roles, and unpredictable changes in work and working conditions. These resources are typically organised into four dimensions: concern, control, curiosity and confidence (Savickas & Porfeli, 2012).

Research over the past two decades has consistently shown that career adaptability is a key resource for successful career development in uncertain and changing contexts (Savickas, 2013; Johnston, 2018). Adaptability has been linked to a range of positive outcomes, including resilience, career satisfaction, engagement, employability and psychological wellbeing (Rudolph et al., 2017; Santilli et al., 2017; Spurk et al., 2019). The measurement of career adaptability has been demonstrated with the Career Adapt Abilities Scale (CAAS) and its short form were investigated and confirmed utilisation across different cultural contexts (Maggiori et al. (2015). In South Africa, research on career adaptability has grown but remains relatively limited compared to international work. Studies have emphasised the value of adaptability in career counselling and guidance, especially for individuals navigating socioeconomic disadvantage and structural barriers to employment (Maree, 2012, 2020). Coetzee and Stoltz (2015) showed that adaptability was related to retention related attitudes and satisfaction among South African employees, highlighting its practical relevance for organisational outcomes. Initial studies have investigated the relationship between career agility and career adaptability however further evidence is required (Coetzee et al., 2020). Additionally, there is still a need to deepen understanding of how adaptability operates across different industries, job levels and demographic groups in the South African labour market, and to clarify how it interacts with newer constructs such as career agility.

H6: Career agility has a positive relationship with self-regulation.

Career agility and self-regulation

Self-regulation refers to an individual's capacity to deliberately plan, monitor, and adjust cognitive, emotional, and behavioural processes in pursuit of personally valued goals (Carey et al., 2004). Core self-regulatory processes include goal setting, strategic planning, self-monitoring, effort regulation, and reflective evaluation of progress. Within the career domain, self-regulation is regarded as a critical psychological resource for navigating career transitions, responding to evolving work demands, and sustaining motivation under conditions of uncertainty and challenge (Coetzee et al., 2020; Savickas, 2013). Despite its theoretical relevance, empirical research examining the relationship between career agility and self-regulation remains limited. The present study therefore provided an opportunity to extend existing literature by exploring the association between these constructs and their potential implications in a changing work context.

H7: Career agility has a positive relationship with job satisfaction.

Job satisfaction and career agility

Job satisfaction is typically defined as an individual's overall evaluative judgement about their job, encompassing emotional reactions and cognitive assessments of work conditions, role characteristics and alignment with personal goals and values (Judge et al., 2017). High levels of job satisfaction are associated with greater wellbeing, lower turnover intentions, improved performance and more positive organisational behaviour, making it a central outcome in organisational and career research.

Emerging work on career agility further suggests that agility may also contribute to job satisfaction. Coetzee and Engelbrecht (2020) and Coetzee (2021) propose that agile employees, who actively update their skills, remain open to technological advancement and take initiative in navigating career opportunities, are more likely to experience their work environment as manageable and aligned with their aspirations, which could promote satisfaction. However, empirical evidence directly linking agility to job satisfaction remains limited, especially in South Africa. Given the close conceptual connection between agility and adaptability, it is important to clarify whether agility predicts satisfaction directly, indirectly through adaptability or in combination with other psychological and contextual factors.

H8: Career agility has an indirect relationship to self-regulation through career adaptability.

Career adaptability mediates the relationship between self-regulation and career agility

A growing body of research has explored the links between self-regulation and career adaptability. One study demonstrated that adaptability can be understood as a set of self-regulatory resources that individuals employ when dealing with career related tasks and transitions (Rossier et al., 2017). This finding shows that individuals with stronger self-regulation skills tend to report higher levels of adaptability, which in turn is associated with better adjustment, engagement and wellbeing (Rossier et al., 2017). A systematic literature review similarly emphasises that effective career self-regulation involves activating adaptability resources, such as concern, control, curiosity and confidence, in response to career challenges and opportunities (Johnston, 2018). Empirical studies support these conceptual connections. For example, Creed et al. and Merino Tejedor et al.) found that adaptive self-regulatory processes, such as planning and problem solving, were associated with greater adaptability and more effective coping with career transitions. Hirschi (2018) and Rudolph et al. (2022) further note that self-regulatory capacities are essential for navigating the demands of the fourth industrial revolution, as individuals must continually update their skills, manage career shocks and make decisions under conditions of uncertainty. Although not as extensively researched in South Africa, self-regulation has important implications for employees who operate in volatile work settings and may experience frequent changes in job roles, organisational structures or employment status. In such contexts, self-regulation likely influences how individuals interpret and respond to career shocks, access learning opportunities and mobilise adaptability and agility resources. Understanding how self-regulation relates to career adaptability and career agility can therefore deepen insight into the psychological mechanisms through which employees maintain employability and psychological health in changing environments.

H9. Career agility has an indirect relationship to job satisfaction through career adaptability.

Career adaptability mediates the relationship between job satisfaction and career adaptability

Previous research has established strong conceptual and empirical links between self-regulation and career adaptability, with adaptability often described as a set of self-regulatory psychosocial resources that support effective coping with career-related tasks, transitions and uncertainty (Johnston, 2018; Rossier et al., 2017). Empirical studies show that planning, goal-setting and problem-solving processes are associated with higher adaptability and better career adjustment outcomes (Merino-Tejedor et al., 2016). In increasingly volatile and

technology-driven work environments, self-regulatory capacity has been identified as critical for managing career shocks and continuous skill development (Hirschi, 2018; Rudolph et al., 2021).

However, despite this growing body of work, little research has examined career adaptability as a mediating mechanism linking self-regulation to newer career constructs such as career agility. Given the conceptual overlap between adaptive readiness, self-regulatory behaviour and agile career responses, investigating these relationships offers an important opportunity to extend existing career adaptation models and to clarify the psychological processes through which individuals manage ongoing change in the contemporary world of work.

Research Approach

Quantitative Empirical Design

A quantitative research design was employed for this study, as it enabled the objective analysis of data and supported the development of generalisable insights (Leedy & Ormrod, 2016). The focus was on career-related constructs, namely career agility, career adaptability, job satisfaction, and self-regulation. By measuring these variables systematically, the study allowed for rigorous statistical analysis and comparison of results. A quantitative approach supported this investigation, as it facilitated the use of structured, standardised procedures for the sample size to ensure validity and reliability (Ghauri et al., 2020). A cross-sectional survey design was used in this study, allowing the researcher to draw inferences about the population based on the collected data (Maier et al., 2023). This approach involved collecting data at a single point in time and is particularly useful for purposes such as measurement validation (Gideon, 2012). The cross-sectional design enables the simultaneous assessment of multiple variables, facilitating the exploration of relationships between them (Maier et al., 2023).

Research Participants

The research study focused on employed individuals in South Africa, using purposive non-probability sampling to invite participants who met specific eligibility criteria (Memon et al., 2025). Purposive sampling was employed to align with the study's objectives and to select participants who represented the broader population while fulfilling the inclusion criteria set by the researcher (Ghauri et al., 2020). Additionally, this approach depended on defined eligibility requirements rather than a formal statistical framework (Leedy & Ormrod, 2016). To qualify, participants had to be at least 18 years old, employed, and have completed a minimum of

Grade 12 secondary education to ensure sufficient understanding of the questionnaire. As language plays a key role in assessment in South Africa, a minimum educational qualification was necessary to guarantee that participants could comprehensively understand the assessment materials (Hill et al., 2021). The final sample comprised 269 participants, with diversity in gender, ethnicity, educational background, and job positions supported by the sampling strategy (Goretzko et al., 2021). Participation in this study was voluntary. Table 1 provides a summary of these sample characteristics.

Table 1

Characteristics of the participants (n = 269)

Item	Category	Frequency	Percentage (%)
Gender	Male	84	31.23%
	Female	185	68.77%
Age	18-29	62	23.05%
	30-39	98	36.43%
	40-49	59	21.93%
	50-59	36	13.38%
	60+	14	5.21%
Ethnicity	African	41	15.24%
	Coloured	21	7.81%
	Indian	24	8.92%
	White	180	66.92%
	Asian	1	0.37%
	Other	2	0.74%
Highest level of Education	Matric/National Senior Certificate	14	5.21%
	Higher Certificate (completed at a higher education institution)	8	2.97%
	National Diploma/Advanced certificate	15	5.58%
	3-year Degree/Advanced Diploma	36	13.38%
	4-year/Honours Degree/ Postgraduate Diploma	109	40.52%

	Master's Degree	75	27.88%
	Doctoral Degree	12	4.46%
Employed sector	Agriculture	5	1.86%
	Catering, accommodation and other trade	2	0.74%
	Community, social and personal services	7	2.6%
	Construction	1	0.37%
	Electricity, gas and water	2	0.74%
	Finance and business services	38	14.12%
	Manufacturing	5	1.86%
	Mining and quarrying	9	3.35%
	Retail, motor trade and commercial agents and allied services	10	3.72%
	Transport, storage and communications	6	2.23%
	Wholesale	3	1.12%
	Education	49	18.22%
	Professional Services	56	20.82%
	Consulting	30	11.15%
	Other	46	17.10%

The sample for this study included various participants employed within the South African context (n = 269). Employed females made up 68.77% of the sample, while males accounted for 31.23%. The average age was 38 years, with the largest proportion of participants falling within the 30–39 years age group (36.43%). Most participants identified as White (66.92%), followed by African (15.24%), Indian (8.92%), and Coloured (7.81%). Educational levels were generally high, with nearly three-quarters holding at least a bachelor’s degree. Additionally, 40.52% had obtained an honours degree or postgraduate diploma, 27.88% a master’s degree, and 4.46% a doctoral degree. Participants were employed across a range of sectors, most notably professional services (20.82%), education (18.22%), finance and business services (14.12%), and consulting (11.15%).

Measuring Instruments

All participants completed a brief biographical questionnaire before answering the survey questions. Information on gender, ethnicity, age, language, highest level of education, and employment sector was collected. This data was used to illustrate the demographic and occupational composition of the sample (Cooper, 2020).

The Career Agility Scale, developed by Coetzee et al. (2020), was created to assess career agility across three constructs: technological adaptivity, agile learning, and career navigation. The tool comprised 14 items rated on a seven-point Likert-type scale ranging from strongly disagree to strongly agree. Technological adaptivity was evaluated with seven items (e.g., “I searched for job roles that evolved with changing technological conditions because they offered opportunities for growth and creativity”). Agile learning was measured with five items (e.g., “I continually searched for opportunities to learn new skills that would improve my career and job success”), and career navigation was assessed with six items (e.g., “I was able to navigate and adapt to change and uncertainty in my job and career environment”). Initial validation of the Career Agility Scale provided evidence of construct validity and high internal consistency reliability (α = .90), with subscale reliabilities ranging from .73 to .89 (Coetzee et al., 2020).

Job satisfaction was assessed using a three-item scale (α = .86) originally developed by Hellgren et al. (1997) to explore the relationship between job perceptions, satisfaction, and employees’ intentions to resign. The items included: “I enjoy being at my job”, “I am content with the job that I have”, and “I am satisfied with my job”. Responses were recorded on a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5).

The original Self-Regulation Questionnaire, designed in 1999 (Brown et al., 1999), contained 63 items that loaded onto seven factors. This was later shortened to 31 items that represented a single factor structure and validated within the South African context (known as the SSRQ) (Carey et al., 2004; Potgieter & Botha, 2009). Responses were obtained on a five-point Likert-type scale ranging from strongly disagree to strongly agree. Illustrative items included “I have a hard time setting goals for myself” and “When it comes to deciding about a change, I feel overwhelmed by the choices” (Carey et al., 2004). The SSRQ demonstrated acceptable internal consistency, with a Cronbach’s alpha coefficient of .92 (Carey et al., 2004).

Procedure

Before commencing the research project, the researcher obtained ethical approval from both the Scientific Committee and the Faculty of Economic and Management Sciences Research Ethics Committee at North-West University (NWU EMS-REC) (NWU-00559-22-A4). Once approval had been granted, data collection commenced through two concurrent processes.

In the first process, the researcher approached the South African branch of a global professional services organisation to request permission to gather data from its employees. The researcher liaised with a Human Resources representative and the organisation's Legal Department to share information about the study and to confirm whether voluntary participation from employees would be possible. A formal email was prepared, outlining key aspects such as the research objectives, participant requirements, data confidentiality, the assessment procedure, and the anticipated benefits of the study. This was followed by a formal discussion with the Legal Department and the Managing Director to address additional questions and to share copies of the communication templates, the university's ethics approval documentation, and the survey itself.

After approval was granted by both the Legal Department and the Managing Director, a company representative who is not in a position of power distributed an email invitation to all organisational employees. This communication included the study details and a hyperlink to the online questionnaire for voluntary completion. The email provided clear information regarding the purpose of the study, estimated participation time, voluntary nature of involvement, potential risks and benefits, and assurances of privacy and confidentiality. Participants provided informed consent electronically before completing the survey, which was administered through QuestionPro. The consent statement described the voluntary nature of participation, procedures for withdrawal, and confidentiality measures. The completion of the online questionnaire took approximately 20 minutes, and participants were given three weeks to complete it.

The second data collection process relied on social media platforms such as Facebook, Instagram, and LinkedIn to broaden the participant base. Posts containing the survey link were shared approximately once per week over a period of five to six months to encourage participation. When accessing the link, potential participants were provided with detailed information about the study's purpose, participation requirements, estimated time commitment, voluntary nature, confidentiality, and possible risks and benefits. Informed consent was again provided electronically via the QuestionPro platform, and the researcher's

contact details were made available for any participant inquiries. Ethics approval information was also clearly stated. The survey took roughly 20 minutes to complete.

Data collected through QuestionPro were securely downloaded and stored on a password-protected computer hard drive. Consistent with ethical guidelines and the informed consent process, only the researcher and her academic supervisors had access to the data (Foxcroft & Roodt, 2013). Following the conclusion of data collection, statistical analyses were performed. All information was securely maintained and accessible solely to the researcher and her supervisors.

Statistical Analysis

The researcher employed a range of advanced statistical methods and software programs to address the study's objectives. To assess the internal consistency and reliability of the instruments used, Cronbach's alpha coefficients and composite reliability estimates were calculated using Jeffrey's Amazing Statistics Program (JASP, Version 0.14.1) (JASP, 2020). Latent variable modelling was conducted through *Mplus* (Version 8.6; Muthén & Muthén, 2021). Confirmatory Factor Analysis (CFA) was utilised to evaluate the psychometric properties of the measurement scales, assess construct validity, and examine potential method effects and measurement invariance (Brown, 2015; Harrington, 2009). In the context of this study, CFA was specifically employed to test the model fit to the data and to investigate the factorial validity of the Career Agility construct. Model fit was evaluated using several established fit indices, including the chi-square statistic (lower values indicating better fit), Comparative Fit Index (CFI ≥ 0.90), Tucker-Lewis Index (TLI ≥ 0.90), Root Mean Square Error of Approximation (RMSEA ≤ 0.08), and Standardised Root Mean Square Residual (SRMR ≤ 0.08) (Harrington, 2009; Hooper et al., 2008; Van de Schoot et al., 2012). An exploratory structural equation model (ESEM) was also tested, which relaxes the exactly-zero cross-loading assumption of CFA to near zero-loading cross-loadings for some of the factors to reduce the correlation between them. The ESEM approach is a novel technique in structural equation modelling and is an elegant solution to wording and context effects between items (Morin, 2023).

To explore the relationships among the study variables, a correlation matrix was computed. Effect sizes were interpreted according to Cohen's (1992) guidelines, whereby correlations of r = 0.30–0.49 were regarded as practically significant (medium effect) and $r \geq 0.50$ as large effects. Discriminant validity among Career Agility and other career-related constructs was also examined. In line with established guidelines, discriminant validity was considered

acceptable when inter-construct correlations were below 0.85 (Brown, 2015). Convergent validity was similarly evaluated by examining correlations among theoretically related measures and by inspecting factor loadings, with loadings of 0.50 or higher deemed acceptable and those exceeding 0.70 considered ideal in CFA models (Hair et al., 2014), but values of 0.30 and above still deemed acceptable in ESEM due to the relaxation of constraints that allow for cross-loadings.

Finally, as part of the Structural Equation Modelling (SEM) process, a structural model was developed by specifying the hypothesised relationships among the latent constructs (see Figure 1). This was an ESEM-within-CFA model which allowed aspects of ESEM into the CFA model with the addition of the structural path specifications. Model fit for the structural model was evaluated using the same criteria applied to the measurement models. Indirect effects were also estimated with 95% confidence intervals using the delta method, which is an available approach in Mplus for WLSMV estimation. All parameters were evaluated at the 95% confidence level ($p < 0.05$).

Ethics and Protection of Personal Information Considerations

Several ethical principles were integrated and applied throughout the research process. The key ethical principles that guided this study included respect for participants, autonomy, beneficence, non-maleficence, and justice (Babbie, 2016). Comprehensive information regarding the purpose and nature of the study was provided to all prospective participants via email to ensure that they could make an informed, voluntary decision about their participation. The researcher supplied the participating organisation with a detailed email outlining the study's purpose, procedures, and voluntary nature of participation. Following approval from the Managing Director and Legal Department, the researcher distributed the invitation email to potential participants within the organisation. All personal information was handled in strict confidence, with access to the data limited exclusively to the researcher and research supervisors, in accordance with the Protection of Personal Information (POPI) Act (Republic of South Africa, 2013). Similarly, individuals who accessed the survey link via social media platforms such as Facebook, Instagram, or LinkedIn, received the same information and were given the option to participate voluntarily.

Every effort was made to avoid potential harm to participants, and any foreseeable limitations or risks associated with participation were clearly communicated (Babbie, 2016; Strydom, 2011). The consent or refusal of individuals to participate remained strictly confidential, thereby ensuring that no participant experienced any form of harm, penalty, or disadvantage

as a result of their decision. Informed consent was obtained electronically, with all information presented in a clear and accessible format to ensure comprehension. For those who chose to participate, the study requirements were explained in detail, including procedures for withdrawal, confidentiality assurances, and confirmation of the voluntary nature of participation. The autonomy and dignity of all participants were respected at all times by anonymising responses and maintaining the confidentiality of all data (Babbie, 2016).

The researcher–participant relationship was underpinned by principles of honesty, integrity, and trust. In alignment with ethical research practice, no information was withheld or misrepresented at any stage (Strydom, 2011).

A sound ethical decision-making framework guided all ethical decisions, and the researcher consulted with the research supervisors whenever clarification or support was required (Strydom, 2011). Data collected electronically were stored securely in password-protected files, accessible only to the researcher and supervisors. The data will be securely retained for five years, after which it will be appropriately destroyed. Should feedback have been requested, the researcher provided only aggregated or general findings to ensure participant anonymity and confidentiality. The study commenced only after formal ethical clearance had been granted by the North-West University Economic and Management Sciences Research Ethics Committee (NWU EMS-REC).

FINDINGS

Table 2

Results of the measurement of the model

Model	x2	df	CFI	TLI	RMSEA	SRMR
1: CFA	2944.703	1672	0.89	0.89	0.051	0.082
2: ESEM	2863.296	1651	0.90	0.89	0.051	0.081

Notes: df = degrees of freedom; CFI = Comparative fit index; TLI = Tucker-Lewis index; RMSEA = Root mean square error of approximation; SRMR = Standardised Root Mean Square Residual

The researcher tested both a CFA and an ESEM model, where an ESEM model is a variant of CFA that allows near-zero cross-loadings of factors on one another, whereas CFA considers these cross-loadings to be 0. The CFA model (Model 1) yielded a chi-square (χ^2) value of 2944.703 with 1672 df, a CFI of 0.89, a TLI of 0.89, a RMSEA) of 0.051, and a SRMR of 0.082. These results suggested a reasonable model fit, although the CFI and TLI values

were marginally below the conventional cut-off of 0.90, indicating slight room for improvement. The ESEM model (Model 2) produced a slightly improved fit, with a χ^2 value of 2863.296 (df = 1651), CFI = 0.90, TLI = 0.89, RMSEA = 0.051, and SRMR = 0.081. The improvement in CFI, along with marginal reductions in χ^2, RMSEA, and SRMR, indicated that the ESEM model provided a marginally better representation of the data compared to the CFA model.

Usually, given the principle of parsimony (simplest model with the nearest fit the best), we would choose the CFA model in this instance. However, there were large correlations between factors in the CFA which reduced in the ESEM and may have better captured the underlying structure of the constructs examined in this study (Morin, 2023). As a result of the CFI of 0.90, it was decided to use that model for further analysis.

Table 3

Standardised loadings for the latent factors

Factor	Item	Loading	SE	p
Technological Adaptivity				
	CAGTA1	**0.56**	**0.16**	**0.001**
	CAGTA2	**0.81**	**0.05**	**0.001**
	CAGTA3	**0.88**	**0.03**	**0.001**
	CAGTA4	**0.68**	**0.01**	**0.001**
	CAGTA5	**0.51**	**0.07**	**0.001**
	CAGTA6	0.43	0.02	0.001
	CAGAL1	-0.01	0.00	0.001
	CAGAL2	0.18	0.13	0.170
	CAGAL3	-0.04	0.08	0.567
	CAGAL4	0.39	0.06	0.001
	CAGCN1	0.00	0.00	0.001
	CAGCN2	0.22	0.03	0.001
	CAGCN3	0.21	0.12	0.068
	CAGCN4	0.14	0.12	0.233

Agile Learning				
	CAGAL1			
		0.73	**0.01**	**0.001**
	CAGAL2	**0.76**	**0.11**	**0.001**
	CAGAL3	**0.38**	**0.17**	**0.026**
	CAGAL4			
		0.62	**0.00**	**0.001**
	CAGTA1	-0.01	0.29	0.975
	CAGTA2	-0.13	0.03	0.001
	CAGTA3	-0.12	0.00	0.001
	CAGTA4	0.02	0.10	0.875
	CAGTA5	0.34	0.14	0.012
	CAGTA6	0.37	0.02	0.001
	CAGCN1	-0.02	0.00	0.001
	CAGCN2	0.09	0.11	0.415
	CAGCN3	-0.15	0.11	0.161
	CAGCN4	-0.13	0.01	0.001
Career Navigation				
	CAGCN1	**0.86**	**0.03**	**0.001**
	CAGCN2	**0.55**	**0.02**	**0.001**
	CAGCN3	**0.87**	**0.10**	**0.001**
	CAGCN4	**0.83**	**0.04**	**0.001**
	CAGTA1	0.21	0.00	0.001
	CAGTA2	0.04	0.01	0.001
	CAGTA3	-0.13	0.02	0.001
	CAGTA4	0.01	0.04	0.752
	CAGTA5	-0.21	0.00	0.001
	CAGTA6	-0.02	0.07	0.758

	CAGAL1	0.11	0.01	0.001
	CAGAL2	-0.07	0.05	0.137
	CAGAL3	0.45	0.06	0.001
	CAGAL4	-0.17	0.03	0.001
Concern	**CASFCON1**	**0.94**	**0.02**	**0.001**
	CASFCON2	**0.70**	**0.09**	**0.001**
	CASFCON3	**0.33**	**0.10**	**0.001**
	CASFCONT1	-0.07	0.00	0.001
	CASFCONT2	0.00	0.01	0.678
	CASFCONT3	-0.03	0.04	0.399
	CASFCUR1	0.37	0.16	0.019
	CASFCUR2	0.06	0.18	0.724
	CASFCUR3	-0.01	0.00	0.001
	CASFCONF1	-0.20	0.00	0.001
	CASFCONF2	0.14	0.08	0.065
	CASFCONF3	0.03	0.16	0.865
Control	**CASFCONT1**	**0.99**	**0.03**	**0.001**
	CASFCONT2	**0.87**	**0.01**	**0.001**
	CASFCONT3	**0.99**	**0.15**	**0.001**
	CASFCON1	0.12	0.00	0.001
	CASFCON2	0.24	0.09	0.010
	CASFCON3	0.33	0.23	0.147
	CASFCUR1	0.27	0.13	0.030
	CASFCUR2	0.08	0.02	0.001
	CASFCUR3	0.24	0.01	0.001
	CASFCONF1	0.22	0.01	0.001
	CASFCONF2	0.09	0.03	0.009

	CASFCONF3	0.13	0.04	0.001
Curiosity	**CASFCUR1**	**0.17**	**0.06**	**0.009**
	CASFCUR2	**0.30**	**0.12**	**0.012**
	CASFCUR3	**0.37**	**0.06**	**0.001**
	CASFCON1	-0.04	0.00	0.001
	CASFCON2	-0.02	0.02	0.413
	CASFCON3	0.42	0.16	0.009
	CASFCONT1	0.11	0.01	0.001
	CASFCONT2	-0.02	0.07	0.761
	CASFCONT3	-0.27	0.12	0.019
	CASFCONF1	-0.07	0.00	0.001
	CASFCONF2	0.21	0.09	0.022
	CASFCONF3	-0.28	0.62	0.650
Confidence	**CASFCONF1**	**0.48**	**0.01**	**0.001**
	CASFCONF2	**0.61**	**0.06**	**0.001**
	CASFCONF3	**0.74**	**0.44**	**0.092**
	CASFCON1	-0.16	0.02	0.001
	CASFCON2	-0.15	0.01	0.001
	CASFCON3	-0.04	0.21	0.854
	CASFCONT1	-0.40	0.05	0.001
	CASFCONT2	-0.11	0.03	0.001
	CASFCONT3	-0.42	0.24	0.076
	CASFCUR1	0.19	0.02	0.001
	CASFCUR2	0.32	0.04	0.001
	CASFCUR3	0.39	0.05	0.001
Job Satisfaction				
	JOBSAT1	0.91	0.01	0.001

	JOBSAT2	0.95	0.01	0.001
	JOBSAT3	0.94	0.01	0.001
Self-Regulation				
	SELFR3	0.72	0.02	0.001
	SELFR2	-0.59	0.02	0.001
	SELFR1	-0.50	0.09	0.001
	SELFR4	-0.63	0.02	0.001
	SELFR5	0.65	0.04	0.001
	SELFR6	0.63	0.04	0.001
	SELFR7	-0.48	0.14	0.001
	SELFR8	-0.60	0.04	0.001
	SELFR9	0.64	0.04	0.001
	SELFR10	-0.65	0.02	0.001
	SELFR11	-0.66	0.01	0.001
	SELFR12	0.67	0.02	0.001
	SELFR13	0.79	0.03	0.001
	SELFR14	0.63	0.00	0.001
	SELFR15	-0.48	0.07	0.001
	SELFR16	-0.64	0.03	0.001
	SELFR17	-0.68	0.10	0.001
	SELFR18	0.68	0.01	0.001
	SELFR19	0.69	0.02	0.001
	SELFR20	0.53	0.06	0.001
	SELFR21	0.55	0.01	0.001
	SELFR22	-0.59	0.01	0.001
	SELFR23	0.65	0.03	0.001
	SELFR24	0.53	0.10	0.001

	SELFR25	-0.48	0.03	0.001
	SELFR26	-0.62	0.03	0.001
	SELFR27	0.55	0.09	0.001
	SELFR28	0.49	0.06	0.001
	SELFR29	0.61	0.02	0.001
	SELFR30	0.65	0.02	0.001
	SELFR31	-0.48	0.05	0.001
Career Adaptability	CARADAPT	BY		
	CASFCON	0.57	0.01	0.001
	CASFCONT	0.89	0.01	0.001
	CASFCUR	0.13	0.20	0.536
	CASFCONF	0.75	0.08	0.001
Career Agility	CARAGIL	BY		
	TECH	0.52	0.08	0.001
	AGILE	0.70	0.03	0.001
	CARNAV	0.66	0.08	0.001

Notes: Bolded text = target (main) loadings of ESEM specifications in the model; SE = Standard error; All p-values < 0.05

All items loaded significantly on their respective latent factors ($p < 0.05$). Across all constructs, the items demonstrated moderate to strong average factor loadings ($\lambda = 0.64$ SD = 0.18), providing evidence of good construct validity. The standard errors were in acceptable ranges for significant loadings. In a minority of instances, some item loadings were below 0.30 such as the first item of the curiosity factor, but the loading was still significant and to ensure cross-study comparability, the item remained included. A similar approach was taken for the career adaptability second-order factor.

Reliability coefficients and correlation matrix for the study variables

Table 4 below represents the correlation matrix for the study variables.

Table 4

Reliabilities and correlation matrix for the latent variables

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Technological Adaptivity	(0.81)										
2. Agile Learning	0.37	(.0.72)									
3. Career Navigation	0.34	0.46	(0.77)								
4. Concern	0.26	0.35	0.33	(0.75)							
5. Control	0.41	0.55	0.51	0.51	(0.89)						
6. Curiosity	0.06	0.08	0.07	0.07	0.11	(0.66)					
7. Confidence	0.34	0.46	0.43	0.43	0.67	0.09	(0.86)				
8. Career Adaptability	0.46	0.61	0.57	0.57	0.89	0.13	0.75	(0.70)			
9. Career Agility	0.52	0.70	0.66	0.49	0.78	0.11	0.66	0.87	(0.66)		
10. Job Satisfaction	0.20	0.27	0.25	0.13	0.21	0.03	0.18	0.24	0.38	(0.95)	
11. Self-Regulation	0.32	0.43	0.40	0.37	0.59	0.08	0.50	0.66	0.61	0.30	(0.95)

Notes: Composite reliability (CR) coefficients in brackets on the diagonal; All correlations statistically significant $p < 0.05$;

Table 4 presents the composite reliability coefficients and the intercorrelations among the latent variables included in the study. As indicated, all constructs demonstrated satisfactory internal consistency, with composite reliability (CR) coefficients exceeding the recommended threshold of 0.70 (Hair et al., 2014). The reliabilities ranged from 0.66 (Curiosity) to 0.95 (Job Satisfaction and Self-Regulation), suggesting acceptable to excellent reliability across the measurement model. Although Curiosity showed a slightly lower reliability coefficient (CR = 0.66), this was considered adequate given the limited number of items within the subscale and the exploratory nature of this dimension.

In terms of interrelationships, the results revealed statistically significant positive correlations among the study variables ($p < 0.05$). As expected, the three subdimensions of Career Agility, Technological Adaptivity, Agile Learning, and Career Navigation, were moderately to strongly interrelated ($r = 0.34 – 0.46$), indicating that these facets are conceptually distinct yet complementary aspects of the broader construct. Career Agility demonstrated strong positive associations with Career Adaptability ($r = 0.87$; large effect) and its subdimensions, particularly Control ($r = 0.78$) and Confidence ($r = 0.66$), suggesting that individuals with greater adaptive career resources also tend to exhibit higher levels of agility in navigating change.

Table 5

Regression results for the structural model

Structural path	β	S.E.	p	Result
Career Agility → Career Adaptability	0.87	0.03	0.001	Significant
Career Agility → Self-Regulation	0.13	0.09	0.140	Not Significant
Career Agility → Job Satisfaction	0.74	0.37	0.047	Significant
Career Adaptability → Self-Regulation	0.55	0.16	0.001	Significant
Career Adaptability → Job Satisfaction	-0.41	0.31	0.185	Not Significant

Notes: β = beta coefficient; S.E. = Standard error; p = Two-tailed statistical significance

The regression results showed that several of the hypothesised relationships were supported. Career Agility had a significant positive path relationship with Career Adaptability (β = 0.87, S.E. = 0.03, p < 0.01, H5). The direct path between Career Agility and Self-Regulation was not statistically significant (β = 0.13, S.E. = 0.09, p = 0.140, H6) indicating that the influence of agility on self-regulation may be indirect and operating through Career Adaptability as a mediating mechanism. This was supported as Career Adaptability showed a significant positive path relationship with Self-Regulation (β = 0.55, S.E. = 0.16, p < 0.01, H8). Career Agility had a significant positive path relationship with Job Satisfaction (β = 0.74, S.E. = 0.37, p < 0.05, H7), whereas Career Adaptability did not show a significant relationship with Job Satisfaction (β = –0.41, S.E. = 0.31, p = 0.185, H9) suggesting that adaptability alone did not directly predict job satisfaction in this sample. Overall, three of the five hypothesised relationships were statistically significant at the p < 0.05 level.

Given the significant direct paths observed in the regression model, potential mediating effects were explored to determine whether Career Adaptability mediated the relationships between Career Agility and the two outcome variables, Self-Regulation and Job Satisfaction.

For the path from Career Agility to Self-Regulation, the indirect effect via Career Adaptability was statistically meaningful (Estimate = 0.41, 95% CI [0.04, 0.72]). Additionally. the indirect effect from Career Agility to Job Satisfaction through Career Adaptability was meaningful (Estimate = –0.32, 95% CI [–0.82, –0.11]). The mediation analysis revealed a significant indirect effect of career agility on job satisfaction through career adaptability, with the 95% confidence interval entirely below zero. This indicates a meaningful negative mediation,

whereby higher levels of career agility were associated with increased career adaptability, which in turn related to slightly lower job satisfaction.

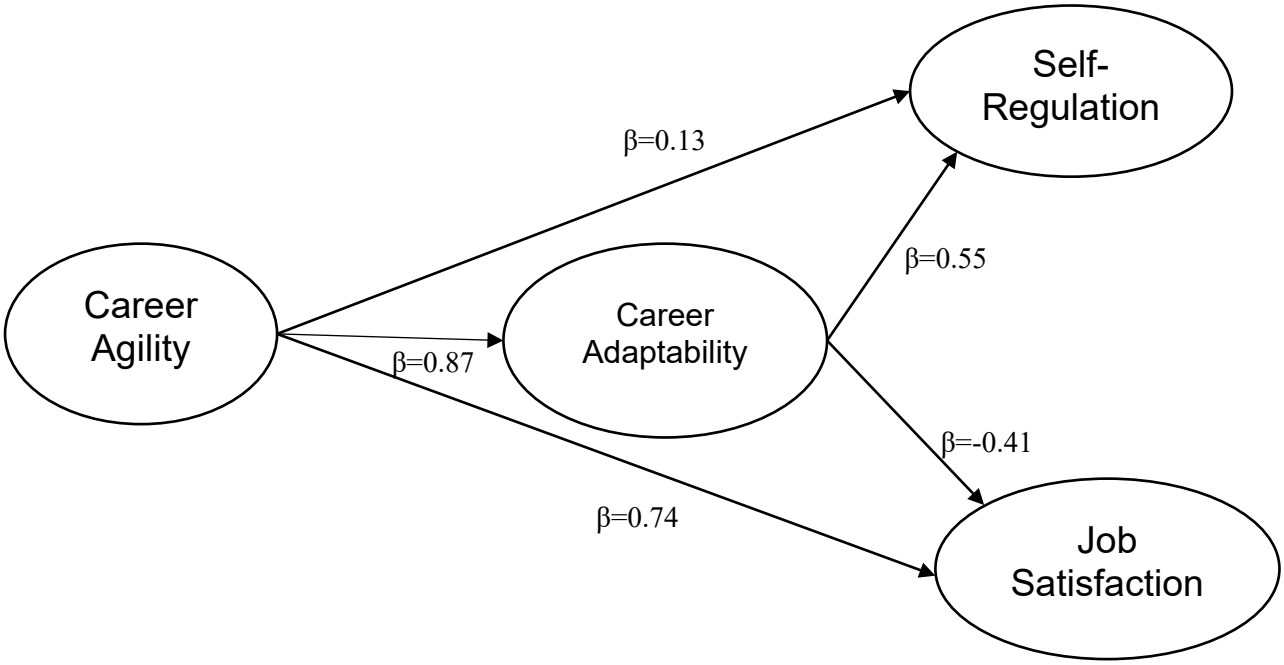

Figure 2

The structural model with path relationships indicated

Overall, the findings show that career adaptability helps to explain how career agility influences career outcomes. Career agility indirectly strengthened self-regulation through its positive effect on adaptability, whereas the indirect effect on job satisfaction was significant but negative, indicating that adaptability may, in some cases, reduce satisfaction with one's current role. This highlights that adaptive career processes can operate differently depending on the outcome examined

DISCUSSION

Outline of findings

The purpose of this study was to evaluate the psychometric soundness of the Career Agility Scale (CAS) by analysing its reliability and validity. This included examining internal consistency indices (Cronbach's alpha and related reliability coefficients) and assessing factorial, convergent, discriminant, and criterion-related validity in relation to relevant career outcomes, specifically job satisfaction and self-regulation.

H1: The Career Agility Scale consists of three factors

The initial hypothesis aimed to assess the model fit for the CAS. To do this, both CFA and a more flexible ESEM approach were applied. The CFA results provided moderate support for the proposed three-factor structure, indicating that the scale generally aligned with its theoretical design. However, the factors were highly correlated. This was expected, as items within each factor were specifically created to measure that particular dimension, which naturally increased their relationships. These high correlations made it difficult to distinguish clearly between factors under the strict CFA model, prompting the use of ESEM. The ESEM model accounted for the relationships among closely related items. By permitting small cross-loadings, ESEM reduced inflated correlations between factors and clarified the distinctions among the three dimensions. Consequently, the ESEM solution supported Hypothesis 1.

H2: The Career Agility Scale shows acceptable internal consistency (reliability)

Secondly, the study examined the internal consistency (reliability) of the CAS. Cronbach's alpha coefficients were employed to assess reliability, and the results showed that the reliability estimates for the three career agility dimensions were within acceptable ranges. Although the Curiosity subscale exhibited a slightly lower reliability estimate, this value remained acceptable given the small number of items and the exploratory nature of this dimension. The findings align with the original research conducted by the developers (Coetzee et al., 2020), which demonstrated satisfactory reliability for the CAS. Overall, the results supported hypothesis 2.

H3: The Career Agility Scale shows acceptable convergent validity

Next, convergent validity was established by examining the correlations between the dimensions of career agility and other career outcomes. As expected, the results showed a positive relationship between career agility and career adaptability. Additionally, most correlations were significant and aligned with expectations, providing evidence of both convergent and discriminant validity. A positive relationship was observed between career adaptability and two factors: agile learning and career navigation. Similarly, a positive relationship was noted between control and these two factors. The results also indicated a positive relationship between career agility and self-regulation. Furthermore, in the assessment of convergent validity, career agility correlated with all three factors of the CAS. These findings support hypothesis 3. This aligns with the research by Coetzee et al. (2021), which confirmed the discriminant and convergent validity of the CAS.

H4: Career agility shows acceptable discriminant validity

Hypothesis 4 focused on assessing discriminant validity related to career agility. Discriminant validity was confirmed by examining the correlations between variables. All correlations were below the threshold set by Brown (2015), which is 0.85, except for the correlation between career agility and career adaptability, which was slightly above at 0.87 but still within the 100th decimal of the standard error. It was decided not to remove items arbitrarily to facilitate future cross-study comparisons, so this value remained acceptable. Therefore, hypothesis 4 was supported as all correlations stayed within acceptable limits.

H5: Career agility has a positive relationship with career adaptability

To investigate hypotheses 5 to 9, it was necessary to examine the structural paths between career agility and the career-related outcomes of job satisfaction and self-regulation. The structural model's regression results showed that career agility was a significant predictor of both career agility and job satisfaction. Firstly, hypothesis 5 was supported as career agility exhibited a significant positive relationship with career adaptability. This indicates that employees who report higher career agility also tend to have stronger career adaptability resources, meaning they will likely manage career development challenges, shifts, and disruptions effectively (Coetzee et al., 2020; Savickas, 2013). Employees with higher levels of career agility are more prone to display flexibility, openness to learning and change, and take initiative and action when faced with new demands, which may result in them drawing on the psychological resources of career adaptability (Coetzee et al., 2020).

H6: Career agility has a positive relationship with self-regulation

Hypothesis 6 proposed that career agility would have a positive relationship with self-regulation, however the results indicate this is not supported. Although the structural model produced a positive coefficient for the relationship between career agility and self-regulation, this effect was not statistically significant. This indicates that career agility does not explain additional unique variance in self-regulation when career adaptability is accounted for within the model. Rather, the results suggest the possibility that the relationship between career agility and self-regulation could be indirect, potentially mediated by the adaptability resources identified within career adaptability. This interpretation aligns with Career Construction Theory, which conceptualises adaptability resources (concern, control, curiosity, and confidence) as critical self-regulatory psychosocial capacities that individuals utilise to navigate career tasks, transitions, and challenges (Savickas, 2013; Savickas & Porfeli, 2012). Future research could expand on these results by examining additional mediators that may explain how career agility contributes to self-regulation, such as proactive personality, work engagement, or resilience.

Additionally, longitudinal studies could also be considered for establishing the causal sequencing between agility, adaptability, and self-regulatory outcomes.

H7: Career agility has a positive relationship with job satisfaction

Hypothesis 7 was supported as the results indicate a positive and significant relationship between career agility and job satisfaction. This suggests that individuals with higher career agility, who proactively learn and adapt to changing work demands, tend to experience greater job satisfaction. This aligns with research highlighting that adaptive career behaviours improve employees' work experiences in rapidly changing workplaces (Hirschi, 2018; Rudolph et al., 2017). Employees who are more agile tend to manage uncertainty more effectively, respond to new demands more effectively, and feel more capable in their roles, all of which support greater job satisfaction (Coetzee et al., 2021; De Vos et al., 2020).

H8: Career agility has an indirect relationship to self-regulation through career adaptability

Hypothesis 8 was supported, as there was a mediating effect of career adaptability in the relationship between career agility and self-regulation. This suggests that career agility indirectly improves self-regulation by first increasing adaptability resources, which then foster more effective self-regulatory behaviour. Research further supports this finding, describing career adaptability as a key self-regulatory resource that helps individuals manage career tasks, transitions, and uncertainty (Akkermans & Kubasch, 2017; Rudolph et al., 2017; Santilli et al., 2014; Zacher, 2014). The mediation finding reinforces the view that career agility acts as an antecedent, while career adaptability functions as the more immediate predictor of self-regulatory outcomes (Coetzee et al., 2020).

H9: Career agility has an indirect relationship to job satisfaction through career adaptability

Lastly, the results for Hypothesis 9 supported an indirect relationship between career agility and job satisfaction through career adaptability; however, this effect was significant and negative, indicating an inconsistent pattern of mediation. Within this sample, career agility showed a positive direct association with job satisfaction, meaning employees with higher agility also tended to report higher adaptability, which was associated with slightly lower satisfaction with their current roles. This suggests that career adaptability may, under certain circumstances, increase awareness of career misalignment, unmet expectations, or readiness for change, which could temporarily reduce satisfaction with one's present job (Rudolph et al., 2017; Zacher, 2014). This finding also aligns with research indicating that career adaptability can have more complex or even ambivalent effects depending on contextual demands, career

stage, or organisational change (Hirschi, 2018). Future research should examine this mediation across diverse industries and career stages and employ longitudinal designs to determine whether adaptability produces short-term reductions in job satisfaction but longer-term improvements. Additionally, exploring different definitions of adaptability may help clarify whether specific subdimensions of adaptability contribute differently to job satisfaction outcomes.

Practical implications

This study provided evidence supporting the reliability and validity of the CAS within the South African context, demonstrating that the measure is psychometrically sound and can be used with individuals and organisations. Furthermore, confirmation of the CAS as a three-factor measure provides organisations, human resource and learning and development functions, as well as scholars and practitioners within career psychology, with a robust framework for evaluating employees' technological adaptivity, agile learning and career navigation capabilities (Coetzee et al., 2020; Coetzee et al., 2021). These competencies are increasingly identified as essential for the success of both organisations and employees amid continuous workplace transformation driven by technological advancement (Crowley-Henry et al., 2019; De Vos et al., 2020). By integrating the CAS into talent management, employee development, and workforce planning initiatives, organisations can obtain meaningful insight into the extent to which employees respond to change and ambiguity in the workplace, are open to learning, and embrace technological advancements (Coetzee et al., 2020). These capabilities are increasingly recognised as essential for navigating ongoing organisational transformation (Coetzee et al., 2020; Hirschi, 2018; Rudolph et al., 2017). Furthermore, given the strong relationship observed between career agility and career adaptability, organisations may benefit from designing interventions that support both constructs. Enhancing employees' agility may strengthen adaptability resources, which enable individuals to deal more effectively with complex career demands, technological disruption and shifting organisational expectations, ultimately supporting greater organisational resilience, capability development and performance in changing environments (Akkermans et al., 2020; Chen et al., 2024 Coetzee et al., 2020;).

The results also highlight the importance of career agility in promoting job satisfaction, suggesting that employees with higher career agility, who proactively learn and adjust to changing work demands, tend to experience more satisfaction within their current role. This is consistent with research emphasising proactive career behaviours as predictors of higher job

satisfaction, work engagement, and overall well-being in environments characterised by rapid change (Fiori et al., 2015; Johnston, 2018; Zacher, 2014).

The results further highlight the practical importance of career adaptability, particularly given its mediating role in the relationship between career agility and self-regulation. Strengthening adaptability resources may enhance employees' ability to self-manage career challenges, regulate behaviour in demanding circumstances and remain resilient during change which continue to be crucial skills in volatile work environments (Rudolph et al., 2017; Zacher, 2014). The incorporation of interventions into broader talent development strategies that focus on building the psycho-social resources associated with career adaptability will likely be beneficial to organisations (Rudolph et al., 2017; Savickas, 2013).

At the same time, the finding that adaptability negatively mediated the relationship between career agility and job satisfaction points to a more nuanced practical consideration. While agility directly enhanced job satisfaction, the indirect pathway via adaptability suggested that highly adaptable employees may become more aware of misalignment between their current roles and evolving career aspirations, which could temporarily reduce satisfaction. This highlights the need for organisations to pair adaptability-building initiatives with clear career pathways, supportive leadership practices and opportunities for meaningful role progression. Providing employees with avenues to draw on their adaptive tendencies may help offset potential decreases in satisfaction linked to increased adaptability (Chen et al., 2024; Hirschi, 2018). Overall, validating the CAS for use in the South African workforce provides practitioners, human resource professionals and organisational psychologists with a robust tool to guide employee development, support change management initiatives and strengthen organisational agility in an increasingly dynamic world of work.

The CAS is a new scale, developed by Coetzee et al. (2020), and initial studies investigated contributed to understanding career agility as a construct and as an antecedent to career adaptability. Further research has refined the number of items and time required to complete the assessment, ensuring it could be paired with other additional surveys to support further research into an employee's degree of agility and adaptability in the workplace (Coetzee et al., 2020; Coetzee et al., 2021). There is a need for additional research on the psychometric properties of career agility and its relationship to career adaptability as well as other career-related outcomes (Coetzee et al., 2020; Coetzee et al., 2021). Validating the CAS within the South African context offers researchers access to a psychometrically robust instrument that can be confidently applied in future empirical work. In addition, this study contributes to the broader field of Industrial and Organisational Psychology by helping to address the existing

gap in research on career agility and related adaptive career resources within organisational settings.

Limitations and recommendations

The present study makes an important contribution by evaluating the psychometric properties of the Career Agility Scale within the South African context. However, several limitations should be acknowledged when interpreting the findings. The first limitation relates to the sample characteristics. The study drew on employed individuals across a range of sectors within South Africa, which supports general relevance but limits the ability to draw industry-specific conclusions. Research suggests that the demands for agility and adaptability may vary across occupational contexts, especially in digitally intensive or rapidly changing sectors (De Vos et al., 2020). Future studies could therefore examine the Career Agility Scale within specific industries to determine whether the structure and relationships observed in this study are replicated across different organisational environments, job levels and industries (Coetzee et al., 2020).

The second limitation concerns the research design. The study employed a cross-sectional survey design, which limits the ability to determine causal relationships between variables (Maxwell & Cole, 2007). Although significant associations were observed between career agility, career adaptability, job satisfaction and self-regulation, the directionality of these relationships cannot be established with certainty. Longitudinal research is therefore recommended to validate the chronological progression of these constructs and to examine whether career agility develops into career adaptability and related outcomes over time (Ployhart & Vandenberg, 2010). Longitudinal approaches would also support clearer testing of mediating processes, particularly the indirect effect observed between career agility and self-regulation (Jose, 2016; Ployhart & Vandenberg, 2010). Experimental research or intervention studies could further clarify whether enhancing agility or adaptability leads to other improved career related outcomes (Coetzee et al., 2020).

A third limitation involves the use of self-report questionnaires. While self-report measures are appropriate for assessing subjective constructs such as agility, adaptability and job attitudes, they are vulnerable to response biases, including social desirability and inflated self-evaluations (Paulhus & Vazire, 2007; Podsakoff et al., 2003). Participants may present themselves in a favourable light, particularly when responding to items associated with desirable workplace behaviours, which may artificially elevate relationships between variables (Donaldson & Grant-Vallone, 2002). Future research may benefit from incorporating additional

data sources, such as 360 survey ratings, behavioural indicators or qualitative interviews, to reduce common method variance and strengthen construct validity (Conway & Lance, 2010). A mixed method approach may also offer richer insight into how employees understand, interpret and enact career agility in their actual work contexts (Tashakkori & Teddlie, 2010).

A fourth limitation concerns the conceptual alignment of the constructs included in the study. Job satisfaction, as measured here, reflects individuals' perceptions and evaluations of their current role and is shaped by current work conditions and personal circumstances (Buitendach & Rothmann, 2009). In contrast, career agility and career adaptability are broader and future oriented constructs that describe an individual's capacity to navigate long term career development, transitions and change (Coetzee et al., 2020; Savickas, 2013). Career agility refers to a dynamic and evolving orientation toward career opportunities, learning and adaptation (Coetzee et al., 2020), whereas career adaptability captures the psychosocial resources that individuals use to manage career related demands over time (Savickas, 2013). This misalignment may partly explain why adaptability did not mediate the relationship between agility and job satisfaction. Future research should therefore consider broader career related outcomes such as career satisfaction, employability, thriving or subjective career success, which may align more closely with the future oriented nature of agility and adaptability (Coetzee et al., 2020).

A final limitation relates to contextual influences during data collection. The period in which the study was conducted was characterised by considerable organisational change across many sectors, including increased digitalisation and economic uncertainty as well as the impact of the COVID-19 pandemic. Research indicates that career related perceptions may vary under conditions of heightened uncertainty or instability (Akkermans & Kubasch, 2017; Zacher, 2014). These conditions may have affected how participants responded to items relating to agility, adaptability and job outcomes. Future research could explore whether the relationships observed in this study are stable across different economic conditions or organisational climates and investigate contextual moderators that may shape career agility or adaptability, such as organisational learning culture, psychological safety or perceived career shocks.

Despite these limitations, the study provides a valuable foundation for ongoing research regarding career agility and its relevance for the modern workplace. Future studies are encouraged to further validate the scale across diverse contexts, examine additional career outcomes such as performance and wellbeing, and evaluate interventions designed to enhance agility and adaptability among employees (Rudolph et al., 2017). Such efforts will

further deepen the understanding of how career agility can be leveraged to support employee development and strengthen organisational resilience in a changing world of work.

Conclusion

The present research substantiated the psychometric soundness of the Career Agility Scale (CAS) within a South African organisational context. The three-factor structure of the CAS, including Technological Adaptivity, Agile Learning and Career Navigation, was empirically supported, with the ESEM model offering a more theoretically coherent and statistically robust representation of the construct than the more restrictive CFA model. Evidence of internal consistency further demonstrated that the CAS subscales function reliably, while analyses of convergent and discriminant validity confirmed that the dimensions of career agility relate to conceptually aligned constructs in expected and theoretically meaningful ways.

The examination of structural relations provided additional insight into the role of career agility in adaptive career functioning. Career agility emerged as a significant predictor of career adaptability and job satisfaction, emphasising its relevance in work environments characterised by rapid technological advancement and ongoing change. Although career agility did not directly predict self-regulation, the indirect effect through career adaptability suggests that employees may draw on adaptability resources as the psychological mechanism through which agility translates into self-regulatory behaviour. Conversely, the absence of an indirect effect on job satisfaction implies that satisfaction may be shaped more strongly by the immediate behavioural expressions of agility than by the broader adaptability resources assessed in this study.

Overall, the findings contribute to the research on adaptive career behaviours in contemporary work settings and position the CAS as a valuable instrument for assessing agility-related capabilities among employees. As organisations continue to confront growing technological disruption and evolving role expectations, cultivating agility and adaptability remains critical for promoting sustained job satisfaction, resilience and effective career self-management. Future research should extend this work by examining the CAS across diverse occupational groups, employing longitudinal designs to clarify causal mechanisms, and investigating additional psychological processes through which agility and adaptability influence career-related outcomes.

REFERENCES

Akkermans, J., & Kubasch, S. (2022). The COVID-19 crisis as a career shock: Implications for careers and career research. *Journal of Vocational Behavior*, 131, 103645. https://doi.org/10.1016/j.jvb.2021.103645

Aydogdu, S., & Asikgil, B. (2011). An empirical study of the relationship among job satisfaction, organizational commitment and turnover intention. *International Journal of Business and Management Studies, 3*(2), 43–53.

Carey, K. B., Neal, D. J., & Collins, S. E. (2004). A psychometric analysis of the Self-Regulation Questionnaire. *Addictive Behaviors, 29*(2), 253–260. https://doi.org/10.1016/j.addbeh.2003.08.001

Chan, S. H. J., & Mai, X. (2015). The relation of career adaptability to turnover intentions: A moderated mediation model. *Journal of Vocational Behavior*, 89, 130–139. https://doi.org/10.1016/j.jvb.2015.05.001

Chen, C. P., Huang, Y. M., & Shen, W. C. (2020). Enhancing career adaptability to cope with career shocks. *Journal of Vocational Behavior,* 120, 103445.

Coetzee, M. (2021). Career wellbeing and career agility as coping attributes in the modern career space. In *Agile coping in the digital workplace: Emerging issues for research and practice* (pp. 35–51). Springer.

Coetzee, M. (2022). Career agility for purposive career exploration: Role of adult learners' career orientations and digital-era world-of-work awareness. *African Journal of Career Development, 4*(1), a54. https://doi.org/10.4102/ajcd.v4i1.54

Coetzee, M., Bester, M. S., Ferreira, N., & Potgieter, I. L. (2020). Facets of career agility as explanatory mechanisms of employees' career adaptability. *African Journal of Career Development, 2*(1), a11. https://doi.org/10.4102/ajcd.v2i1.11

Coetzee, M., Deas, A., Veldsman, D., & Dhliwayo, P. (2022). Career agility and career embeddedness as psychological needs of the value-oriented psychological contract.

South African Journal of Psychology, 52(3), 364–378. https://doi.org/10.1177/00812463221081341

Coetzee, M., Ferreira, N., & Potgieter, H. (2021). Assessing the construct validity of the Career Agility Scale for measuring adult workers' digital-era adaptive readiness. *Journal of Psychology in Africa, 31*(4), 321–331.

Coetzee, M., Mbiko, H. N., & Nel, E. (2023). To what extent do career agility and psychological capital activate employees' career adaptability and foster their career resilience and career satisfaction? *South African Journal of Psychology, 53*(3), 438–451. https://doi.org/10.1177/00812463231186271

De Vos, A., Van der Heijden, B. I. J. M., & Akkermans, J. (2020). Sustainable careers: Towards a conceptual model. *Journal of Vocational Behavior*, 117, 103196.

Fiori, M., Bollmann, G., & Rossier, J. (2015). Exploring the path through which career adaptability increases job satisfaction and lowers job stress: The role of affect. *Journal of Vocational Behavior*, 91, 113–121. https://doi.org/10.1016/j.jvb.2015.08.010

Hirschi, A. (2018). The fourth industrial revolution: Issues and implications for career research and practice. *Journal of Vocational Behavior,* 104, 1–3.

Hirschi, A., Herrmann, A., & Keller, A. C. (2015). Career adaptivity, adaptability, and adapting: A conceptual and empirical investigation. *Journal of Vocational Behavior,* 87, 1–10. https://doi.org/10.1016/j.jvb.2014.11.008

Hite, L. M., & McDonald, K. S. (2020). Careers after COVID-19: Challenges and changes. *Human Resource Development International, 23*(4), 427–437. https://doi.org/10.1080/13678868.2020.1779576

Ismail, S., Potgieter, I. L., & Coetzee, M. (2023). Self-regulatory employability attributes and competency: The strengthening role of grit. *Frontiers in Psychology,* 14, 1298299. https://doi.org/10.3389/fpsyg.2023.1298299

Johnston, C. S. (2018). A systematic review of the career adaptability literature and future outlook. *Journal of Career Assessment, 26*(1), 3–30. https://doi.org/10.1177/1069072716679921

Judge, T. A., Weiss, H. M., Kammeyer-Mueller, J. D., & Hulin, C. (2017). Job attitudes, job satisfaction, and job affect: A century of continuity and change. *Journal of Applied Psychology, 102*(3), 356–374.

Lim, W. M. (2023). The workforce revolution: Reimagining work, workers, and workplaces for the future. *Global Business and Organizational Excellence, 42*(4), 5–10.

Lodi, E., Zammitti, A., Magnano, P., Patrizi, P., & Santisi, G. (2020). Career adaptability, resilience, and life satisfaction: A mediational analysis in working adults. *Frontiers in Psychology,* 11, 546.

Maggiori, C., Rossier, J., & Savickas, M. L. (2015). Career Adapt-Abilities Scale–Short Form (CAAS-SF): Construction and initial validation. *Journal of Vocational Behavior*, 91, 1–16.

Maree, J. G. (2012). The career adaptability construct: Implications for career counselling. *South African Journal of Psychology, 42*(1), 1–12.

Maree, J. G. (2020). Innovating career counselling in the COVID-19 era. *British Journal of Guidance & Counselling, 48*(2), 251–257.

Merino-Tejedor, E., Hontangas, P. M., & Boada-Grau, J. (2016). Career adaptability and its relation to self-regulation, career construction, and academic engagement among Spanish university students. *Journal of Vocational Behavior*, 93, 92–102. https://doi.org/10.1016/j.jvb.2016.01.005

Rasool, F. (2021). New forms of work, skills demand and supply in the changing world of work in South Africa. Department of Employment and Labour, Republic of South Africa.

Rossier, J., Ginevra, M. C., Bollmann, G., & Nota, L. (2017). The importance of career adaptability, career resilience, and employability in designing a successful life. In *Psychology of career adaptability, employability and resilience* (pp. 65–82). Springer.

Rudolph, C. W., Allan, B., Clark, M., Hertel, G., Hirschi, A., Kunze, F., Van Vianen, A. E. M., & Zacher, H. (2021). Pandemics and the world of work. *Industrial and Organizational Psychology, 14*(1–2), 1–35.

Santilli, S., Nota, L., & Soresi, S. (2017). Career adaptability, hope, and life satisfaction. *Journal of Vocational Behavior*, 102, 10–21.

Savickas, M. L. (1997). Career adaptability: An integrative construct. *The Career Development Quarterly, 45*(3), 247–259.

Savickas, M. L. (2005). The theory and practice of career construction. In S. D. Brown, & R. W. Lent (Eds.), *Career development and counseling* (pp. 42–70). Wiley.

Savickas, M. L., & Porfeli, E. J. (2012). Career Adapt-Abilities Scale: Construction, reliability, and measurement equivalence across 13 countries. *Journal of Vocational Behavior,* 80(3), 661–673.

Spurk, D., Hirschi, A., & Dries, N. (2019). Antecedents and outcomes of objective versus subjective career success. *Journal of Management, 45*(1), 35–69. https://doi.org/10.1177/0149206318786563

Tolentino, L. R., Garcia, P. R. J. M., Lu, V. N., Restubog, S. L. D., Bordia, P., & Plewa, C. (2014). Career adaptation and proactive career behaviour. *Journal of Vocational Behavior,* 84, 39–48.

Xu, H., & Savickas, M. L. (2022). Development and initial validation of the job-search self-regulation scale: Expanding the career adaptation model of job search. *Journal of Counseling Psychology, 69*(5), 602–613. https://doi.org/10.1037/cou0000609

Zacher, H. (2014). Career adaptability predicts subjective career success above and beyond personality traits and core self-evaluations. *Journal of Vocational Behavior, 84*(1), 21–30. https://doi.org/10.1016/j.jvb.2013.10.002

CHAPTER 3

CONCLUSIONS, LIMITATIONS, AND RECOMMENDATIONS

This chapter summarises the study's conclusions by linking the research objectives to the key findings. It then outlines the study's limitations and provides recommendations for organisations and future research on career agility.

3.1 Conclusions

Career agility remains a relatively new construct that has not yet been extensively examined, resulting in limited empirical attention from researchers, practitioners and organisational leaders, particularly within the South African context. Although empirical work is only beginning to explore its nature and implications, the rapid evolution of the modern work environment and the continual shift in skill requirements highlight the urgent need for deeper investigation into this construct. As organisations and employees confront accelerating technological disruption, digitalisation, and changing role expectations, there is a growing need for rigorous tools to assess employees' readiness to navigate ongoing change. The introduction of the Career Agility Scale (CAS) represents an important advancement, offering one of the first structured approaches for measuring career agility as a psychological resource. By validating the CAS within the South African context, this study sought to clarify the role of career agility as an antecedent of adaptive career functioning and to support its application within a post-COVID-19, Fourth Industrial Revolution world of work.

The general objective of this study was to validate the CAS for the South African context by evaluating the psychometric properties, thereby contributing to the expanding body of research on how career agility can be understood and measured. This involved investigating specific objectives, including determining the factor structure, reliability, convergent validity, discriminant validity, and criterion validity of the CAS. Hypotheses were formulated to address these objectives, which were either supported or rejected

Objective 1: To establish how career agility, career-adaptability, job satisfaction and self-regulation are conceptualised according to the literature

The primary goal was to determine how career agility and related constructs such as career adaptability, job satisfaction, and self-regulation are understood in the scientific literature. This was accomplished through an extensive review of existing studies presented in Chapter 2. Career agility appeared as a relatively new concept, reflecting employees' willingness and readiness to adapt to changing circumstances in the workplace by engaging in continuous

learning, adopting new technologies, and navigating shifting career paths (Coetzee et al., 2020; Coetzee et al., 2021). Career adaptability was regarded as a key psychosocial resource that helps individuals handle career tasks, transitions, and uncertainty (Savickas, 2013). Additionally, job satisfaction is seen as an individual's perception and assessment of their role, shaped by personal circumstances as well as features of the work environment (Buitendach & Rothmann, 2009). Self-regulation was described as a vital behavioural skill that supports adaptive functioning by allowing individuals to monitor and control their responses to changing demands (Potgieter & Botha, 2009). Overall, the literature provided clear conceptual backing for positioning career agility as a precursor to career adaptability and related career outcomes, and this objective was successfully achieved.

Objective 2: To establish if the Career Agility Scale is valid and reliable in the South African context

The second ~~and third~~ specific objective~~s~~ related to determining whether the CAS is a valid and reliable instrument in the South African context by examining its factor structure, internal consistency, factorial, convergent and discriminant validity, as well as its criterion-related validity with career adaptability, job satisfaction and self-regulation. These objectives were also achieved. The findings provided support for a three-factor structure (Technological Adaptivity, Agile Learning and Career Navigation), with the ESEM solution offering a more realistic and theoretically consistent representation than the CFA model. Reliability was also confirmed, as the Cronbach alpha and composite reliability coefficients for the overall scale and each subscale were within acceptable ranges (Career Agility α = 66; Technological Adaptivity α = 0.81; Agile Learning α = 0.72; Career Navigation α = 0.75). Evidence of convergent validity was observed through meaningful, theoretically aligned correlations between career agility and related constructs, particularly career adaptability. Discriminant validity was generally supported, with most correlations remaining below recommended thresholds, although the strong association observed between career agility and career adaptability reflected their close conceptual relationship. These results were supportive with findings by the earlier research (Coetzee et al., 2020; Coetzee et al., 2021) Overall, the findings provide support for the psychometric properties of the Career Agility Scale for use within the South African context.

Objective 3: To determine the relationship between career agility, career adaptability and job satisfaction, **and**

Objective 4: To determine the relationship between career agility, career adaptability and self-regulation

The following specific objectives aimed to explore the relationships between career agility, career adaptability, and job satisfaction, as well as between career agility, career adaptability, and self-regulation, including the potential indirect pathways proposed in the research model (criterion validity). These objectives were successfully met. Consistent with expectations, career agility significantly and positively predicted career adaptability, confirming its role as a precursor to adaptability resources in line with initial findings (Coetzee et al., 2020; Coetzee et al., 2021). Additionally, career agility exhibited a positive direct relationship with job satisfaction, indicating that employees who are more open to learning, proactive in managing change, and willing to adopt technological shifts tend to experience higher satisfaction with their current roles. Limited research has examined the relationship between career agility and career-related outcomes, including self-regulation and job satisfaction.

In contrast, the direct relationship between career agility and self-regulation was not statistically significant when career adaptability was included in the model. Instead, career adaptability emerged as a significant mediator of the relationship between career agility and self-regulation, supporting the hypothesis that agility exerts its influence on self-regulatory behaviour primarily through adaptability resources. This pattern is consistent with Career Construction Theory, which positions adaptability as a self-regulatory psychosocial capability that channels adaptive tendencies into concrete behavioural responses (Merino-Tejedor et al., 2016; Savickas, 2002). The mediation analyses, therefore, provide initial empirical support for the hypothesis that employees' readiness to embrace change (career agility) may translate into more effective self-regulation when supported by strong adaptability resources (Coetzee et al., 2020).

The indirect relationship between career agility and job satisfaction through career adaptability revealed a more complex pattern. While agility itself was positively linked to job satisfaction, the indirect effect via adaptability was negative, indicating mediation. This may imply that highly adaptable employees become more aware of mismatches between their current roles and their evolving aspirations or external opportunities, which could influence their satisfaction with their current job (Orie & Semeijn, 2022). These findings emphasise that adaptability does not always have a uniformly positive effect and that its impact on attitudinal outcomes like job satisfaction may depend on contextual factors such as organisational support, career prospects, or perceived career fit (Lee et al., 2021). In summary, the hypotheses concerning the links between career agility, career adaptability, job satisfaction, and self-regulation were largely supported, suggesting a more intricate interplay among these constructs than initially

expected. To date, relatively little empirical research has examined career agility in relation to key career-related outcomes such as adaptability, job satisfaction, and self-regulation. The present findings thus represent an initial step in addressing this gap; however, further research is necessary to expand, refine, and build upon these early insights.

Objective 5: To provide recommendations for future research and practice as well as identify potential limitations of the study

The final specific objective was to provide practical recommendations, identify future research opportunities, and recognise the limitations of the study. These objectives were addressed through the discussion of recommendations and limitations below.

In practice, the validation of the CAS in the South African context provides organisations, human resource practitioners, and career psychologists with a psychometrically sound tool for assessing employees' technological adaptability, agile learning, and career navigation. The demonstrated links between career agility, career adaptability, and job satisfaction suggest that interventions aimed at fostering agility and adaptability may enhance employees' capacity to cope with complex work demands and support more positive work experiences.

In conclusion, the general objective of investigating the psychometric properties of the CAS in a South African employee sample was achieved, and the specific objectives relating to conceptual clarification, scale validation, and the examination of structural relationships between career agility, career adaptability, job satisfaction and self-regulation were largely met. The findings position career agility as a meaningful antecedent of adaptability and as a relevant resource for promoting adaptive career functioning and job satisfaction in dynamic work contexts. Overall, the study adds to the growing body of research on adaptive career behaviours in the 4IR and post-pandemic world of work and provides a solid platform for ongoing empirical and applied work on career agility within the South African organisational context.

3.2 Limitations

While the present study offers a valuable contribution by assessing the psychometric properties of the CAS within the South African context, several limitations should be acknowledged when reviewing the research and its findings.

The first limitation concerns the sample's characteristics. Participants were recruited from a wide range of sectors, which supports the overall applicability of the findings but limits insights specific to any industry. Previous research suggests that the demands for agility and adaptability may vary across occupational contexts, especially in technologically intensive or rapidly evolving sectors (De Vos et al., 2020; Lee et al., 2021). Future research should therefore explore the CAS within specific industries to determine whether its factor structure and related relationships remain consistent across different organisational settings and job levels (Coetzee et al., 2020).

The second limitation relates to the cross-sectional research design. While the study identified significant associations between career agility, career adaptability, job satisfaction and self-regulation, causal inferences cannot be made (Maxwell & Cole, 2007). Longitudinal research is needed to establish whether agility precedes the development of adaptability resources and whether these subsequently influence career-related outcomes over time (Coetzee et al., 2020; Ployhart & Vandenberg, 2010). Such designs would also facilitate clearer assessment of mediating processes, including the indirect pathway observed between career agility and self-regulation (Jose, 2016). Experimental or intervention-based studies may further clarify whether developing agility or adaptability produces measurable improvements in employee outcomes (Coetzee et al., 2020).

A third limitation concerns the reliance on self-report questionnaires. While appropriate for assessing subjective constructs such as agility, adaptability and job attitudes, self-report measures may be vulnerable to biases including social desirability and inflated self-evaluations (Paulhus & Vazire, 2007; Podsakoff et al., 2003). These biases may artificially strengthen associations between constructs. Future research should incorporate alternative data sources, such as multi source ratings or qualitative methods, to reduce common method variance and enhance construct validity (Conway & Lance, 2010). Mixed-method designs may

also provide richer insight into how employees understand and demonstrate career agility in real-world contexts (Tashakkori & Teddlie, 2010).

The fourth limitation relates to conceptual alignment. Job satisfaction, as measured in this study, reflects evaluations of one's current role and immediate work conditions (Buitendach & Rothmann, 2009). In contrast, career agility and career adaptability represent future-oriented capabilities concerned with long-term development, transitions and changing demands (Coetzee et al., 2020; Savickas, 2013). This conceptual mismatch may help explain why career adaptability did not mediate the relationship between agility and job satisfaction. Future research should consider broader career outcomes such as employability, career satisfaction, thriving and subjective career success, as these may align more closely with the long-term orientation of career agility and adaptability (Coetzee et al., 2020).

A final limitation concerns contextual influences during data collection. The study was conducted during a period marked by extensive organisational change, economic uncertainty and the broader impact of the COVID-19 pandemic. Research indicates that career perceptions may fluctuate under conditions of heightened instability (Akkermans & Kubasch, 2017; Lee et al., 2021; Zacher, 2014), which may have shaped participants' responses regarding agility, adaptability and job-related attitudes. Future research should test whether these relationships hold across different contexts and examine key moderating conditions.

Despite these limitations, the study offers a valuable foundation for ongoing research on career agility and its relevance for the contemporary workplace. Further validation of the CAS across diverse contexts, together with expanded investigation of additional outcomes such as performance and wellbeing, will deepen understanding of how career agility can be developed and leveraged to support employee growth and strengthen organisational resilience in an evolving world of work (Coetzee et al., 2020; Coetzee et al., 2021).

3.3 Recommendations

3.3.1 Recommendations for practice

The validation of the CAS within the South African context provides a valuable foundation for organisations, practitioners, and career development professionals to further explore and

implement the concept of career agility. As one of the first empirically validated tools for measuring career agility in South Africa, the CAS offers meaningful insights into how employees respond to technological disruption, ongoing change, and shifting work demands. Organisations should utilise this evidence by increasing awareness of career agility as a strategic capability and prioritising initiatives that enhance employees' adaptive readiness (Coetzee et al., 2020; Hirschi, 2018).

Based on the findings, and notably the strong relationship observed between career agility and career adaptability, organisations may benefit from implementing targeted development initiatives that enhance technological adaptivity, agile learning, and career navigation. Developing these capabilities can help employees manage uncertainty, engage proactively in continuous learning, and make informed career adjustments within evolving roles and work environments (Coetzee et al., 2020; Coetzee et al., 2021; Savickas, 2013).

Enhancing employees' agility is likely to bring wider organisational benefits. Employees with higher levels of career agility are better equipped to handle changing job demands, actively pursue development opportunities, and manage transitions (Coetzee et al.,2020; Coetzee et al., 2021). These behaviours are linked to greater job satisfaction (Chan & Mai, 2015; Rudolph et al., 2017), improved psychological resources (Johnston, 2018), and more effective self-regulation outcomes (Merino-Tejedor et al., 2016). Encouraging agility and adaptability can also help organisations maintain performance during periods of change, minimise skills gaps, and bolster internal talent pipelines (Rudolph et al., 2017; Shet, 2024).

Furthermore, practitioners can integrate the CAS into talent management and development processes, including reskilling initiatives, leadership development, coaching, succession planning and workplace learning strategies. By identifying employees who may require support in strengthening their agility resources, organisations can tailor interventions to individual and team needs, fostering a workforce that is prepared to succeed within the fast-changing landscape of the Fourth Industrial Revolution (Hirschi, 2018).

3.3.2 Recommendations for future research

Several directions for future research arise from the findings of this study. First, conducting longitudinal research is highly recommended to evaluate the causal relationship between

career agility, career adaptability, and career-related outcomes (Ployhart & Vandenberg, 2010). Such a method would enable researchers to explore whether agility leads to the development of adaptability resources and to understand how these relationships develop over time (Coetzee et al., 2020). Longitudinal designs may also provide greater insight into the mediating processes identified in this study, especially the indirect link between agility and self-regulation.

Second, the study drew on a general working sample of employees across multiple sectors in South Africa. Future research should therefore adopt industry-specific designs, as experiences of technological change, skill demands and adaptive career behaviour are likely to vary across occupational contexts and organisational environments (De Vos et al., 2020; Rikala et al., 2024). Sector-focused investigations may provide more context-sensitive insights into how career agility is enacted and supported within distinct professional settings characterised by differing levels of technological intensity and environmental change.

Third, the limitations associated with sole reliance on self-report measures, future research may benefit from adopting mixed-method approaches. The incorporation of qualitative methods, such as interviews, focus groups, or 360 ratings, could provide deeper insight into how employees understand and enact career agility in their everyday work contexts. In addition, the use of multi-source data, including supervisor or peer ratings and behavioural or performance indicators, may help reduce common method variance and strengthen construct validity (Conway & Lance, 2010). Combining qualitative and quantitative approaches may therefore offer a more comprehensive and robust understanding of career agility and its associated outcomes (Tashakkori & Teddlie, 2010).

Finally, data collection for this study occurred during a period marked by significant organisational disruption in the aftermath of the COVID-19 pandemic (Akkermans et al., 2020). Future research should explore whether employee perceptions and experiences of agility, adaptability and job-related outcomes remain stable as organisational environments continue to evolve. Investigating contextual moderators, including organisational learning culture, leadership support, digital readiness, and career shocks, would provide valuable insights into the factors that shape the development and impact of career agility.

Overall, continued research on the CAS across diverse populations, sectors, and methodological approaches will deepen understanding of career agility, enhance its practical and theoretical relevance in an increasingly dynamic world of work, and inform the interventions required for employees.

REFERENCES

Akkermans, J., & Kubasch, S. (2017). #Trending topics in careers: A review and future research agenda. *Journal of Vocational Behavior, 98*, 70–90. https://doi.org/10.1016/j.jvb.2016.12.003

Akkermans, J., Richardson, J., & Kraimer, M. L. (2020). The COVID-19 crisis as a career shock: Implications for careers and career research. *Journal of Vocational Behavior, 119*, 103434. https://doi.org/10.1016/j.jvb.2020.103434

Alviani, D., Hilmiana, Widianto, S., & Muizu, W. O. Z. (2024). Workforce agility: A systematic literature review and research agenda. *Frontiers in Psychology,* 15, 1376399. https://doi.org/10.3389/fpsyg.2024.1376399

Coetzee, M., Bester, M. S., Ferreira, N., & Potgieter, H. (2020). Facets of career agility as explanatory mechanisms of employees' career adaptability. *African Journal of Career Development*, *2*(1). https://doi.org/10.1080/14330237.2021.1952725

Coetzee, M., Ferreira, N., & Potgieter, H. (2021). Assessing the construct validity of the Career Agility Scale for measuring adult workers' digital era adaptive readiness. *Journal of Psychology in Africa*, *31*(4), a11. https://doi.org/10.4102/ajcd. v2i1.11

Conway, J. M., & Lance, C. E. (2010). What reviewers should expect from authors regarding common method bias in organizational research. *Journal of Business and Psychology, 25*(3), 325–334. https://doi.org/10.1007/s10869-010-9181-6

De Vos, A., Van der Heijden, B. I. J. M., & Akkermans, J. (2020). Sustainable careers: Towards a conceptual model. *Journal of Vocational Behavior,* 117, 103196. https://doi.org/10.1016/j.jvb.2019.103196

Hirschi, A. (2018). The fourth industrial revolution: Issues and implication for career research and practice. *The Career Development Quarterly, 66*(3), 192-204. https://doi.org/10.1002/cdq.12142

Johnston, C. S. (2018). A systematic review of the career adaptability literature and future outlook. *Journal of Career Assessment*, *26*(1), 3-30. https://doi.org/10.1177/1069072716679921

Lee, P. C., Xu, S. T., & Yang, W. (2021). Is career adaptability a double-edged sword? The impact of work social support and career adaptability on turnover intentions during the COVID-19 pandemic. *International Journal of Hospitality Management, 94,* Article 102875. https://doi.org/10.1016/j.ijhm.2021.102875

Maxwell, S. E., & Cole, D. A. (2007). Bias in cross-sectional analyses of longitudinal mediation. *Psychological Methods, 12*(1), 23–44.

Merino-Tejedor, E., Hontangas, P. M. & Boada-Grau, J. (2016). Career adaptability and its relation to self-regulation, career construction, and academic engagement among Spanish university students. *Journal of Vocational Behavior*. 93. https://doi.org/10.1016/j.jvb.2016.01.005

Orie, S., & Semeijn, J. H. (2022). Stay or leave? The role of career adaptability and organizational embeddedness for turnover intentions. *Journal of Career Development, 49*(5), 1196–1211. https://doi.org/10.1177/08948453211028300

Paulhus, D. L., & Vazire, S. (2007). The self-report method. In R. W. Robins, R. C. Fraley, & R. Krueger (Eds.), *Handbook of research methods in personality psychology* (pp. 224–239). Guilford Press

Ployhart, R. E., & Vandenberg, R. J. (2010). Longitudinal research: The theory, design, and analysis of change. *Journal of Management, 36*(1), 94–120

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879-903.

Rikala, P., Braun, G., Järvinen, M., Stahre, J., & Hämäläinen, R. (2024). Understanding and measuring skill gaps in Industry 4.0. *Technological Forecasting and Social Change,* 201, 123206. https://doi.org/10.1016/j.techfore.2024.123206

Rudolph, C. W., Lavigne, K. N., Katz, I. M., & Zacher, H. (2017). Linking dimensions of career adaptability to adaptation results: A meta-analysis. *Journal of Vocational Behaviour,* 102, 151-173.

Savickas, M. L. (2002). Career construction: A developmental theory of vocational behavior. In D. Brown (Ed.), *Career choice and development* (4th ed., pp. 149-205). Jossey-Bass.

Shet, S. V. (2024). A VUCA-ready workforce: Exploring employee competencies and learning and development implications. *Personnel Review, 53*(3), 674-703. https://doi.org/10.1108/PR-10-2023-0873

Zacher, H. (2014). Career adaptability predicts subjective career success above and beyond personality traits and core self-evaluations. *Journal of Vocational Behaviour,* 84(1), 21-30. https://doi.org/10.1016/j.jvb.2013.10.002